Where to Buy Helium

A party helium tank is the most convenient way to fill your ZEP-AIR™ balloon and keep it inflated. In the USA, small helium tanks are sold in the party section of Walmart, Target, Smart & Final, ToysRUs and almost any place selling party supplies. Visit www.balloontime.com to locate helium tank retailers in your area, USA or abroad.

If you prefer to bring your balloon to a shop that fills helium party balloons, be sure to ask if the helium is pure. If it's mixed, you need to know the percentage of helium content.

If you don't need the balloon to float, i.e. suspended by wire or supported otherwise, then you may inflate the balloon with air. Air from a compressed source or a pump is preferable to blowing air into the balloon through a straw which adds moisture thereby reducing the lift ability.

Balloon Storage

In a well ventilated space, deflate the ZEP-AIR™ balloon by inserting a drinking straw into the valve deep enough to allow the gas inside to discharge. Do not inhale the gas! Read the warnings and precautions below.

Remove the drinking straw from the balloon valve and fold. Store in a box in a cool dry place.

Δ! Warnings and Precautions

Before using balloons or helium tanks, please familiarize yourself with the following warnings.

Keep out of the reach of children.

Children under eight years can choke or suffocate on uninflated or broken balloons. Adult supervision is required. Keep uninflated balloons away from children. Discard broken balloons immediately.

Do not place the helium tank nozzle in mouth or nose for any reason.

Doing so can damage lungs and other body parts, which can result in serious personal injury or death. The helium tank cylinder contains compressed helium under pressure.

Do not inhale helium. Use only in a well ventilated area. Never use in closed spaces.

Helium reduces and can eliminate oxygen available for breathing. Inhaling helium can result in serious personal injury or death.

Caution: Balloon may conduct electricity.

Do not use near overhead power lines. Misuse may cause personal injury.

ZEP-AIR™ Blimp Balloon Lift and Float Time Primer

If you need your ZEP-AIR™ blimp to float, please read this before you get started. Whether your goal is to fly the ZEP-AIR™ RC Blimp indoors or tether the ZEP-AIR™ Ad Blimp, these basics are important for success, especially if your application is pushing the limits of the balloon's lift capacity. (i.e. large size advertising graphics, use of He-air mixtures and locations of high altitude and/or temperature)

The ZEP-AIR™ balloon baseline lift capacity is 40g (grams). It assumes use of pure helium, at sea level, and a comfortable indoor climate. Adjustments to the lift capacity are made from this baseline.

Since balloons naturally loose lift gradually over time, maximizing the lift at the start is desirable for extended float times and maximizing payload. The most important factors to consider in order of importance are:

Payload

The payload directly reduces the balloon's lift margin by the weight of the payload, irregardless of all other factors. The payload for the ZEP-AIR™ RC Blimp is the motor vehicle pod which weighs 20g. The payload for the Ad Blimp is the printed media attached to the balloon sides. It's critical to design the graphics with weight in mind. Refer to the guidelines provided for media applications.

Helium Gas Purity

Helium is the "lighter than air" gas which produces the balloon's lift. A pure (100%) helium gas will provide the full lift capacity. Sometimes the helium gas is mixed with air which proportionally reduces the lift capacity. For instance, an air mixture with 80% helium reduces the ZEP-AIR™ balloon lift capacity to 32g.

Generally, a party supply shop with commercial fill tanks, will be able to tell you if it's pure, and if it's mixed, the percentage of helium. If you intend to buy a retail packaged helium tank , check the package contents.

Location Elevation (Altitude)

The ZEP-AIR™ balloon's lift capacity is reduced by 1g for every 600ft in elevation. The lift in Denver (Elv. 5280 ft), for example is reduced by about 9g.

Location Temperature, Pressure and Humidity

Temperature, Pressure and Humidity have a lesser impact, typically no more than 5% on average or approximately 2 grams of variation on the lift capacity of the ZEP-AIR™ balloon.

 Although it's small, these factors affect the flying performance of the ZEP-AIR™ RC blimp which operates near neutral buoyancy (floats downward gradually without propeller thrust).   Fractional gram ballast plates are used to precisely maintain the required buoyancy for good flying performance.

With the exception of an incoming storm system or HVAC cycles, the effects of Pressure and Humidity are secondary to temperature.

For example, relocating the ZEP-AIR™ RC Blimp from a climate controlled room to one that's not, will most likely require adding or removing ballast plates to restore the desired buoyancy.

Also consider a situation that arises when flying the ZEP-AIR™ RC Blimp in a room with high ceilings. Since the air is cooler at ground level, where the buoyancy is set, the lift thrust required to climb will be greatest at the ceiling where the air temperature is highest.

Refer to ZEP-AIR.com for more helpful tips and educational references.

ZEP-AIR™ Media Guidelines for Advertising and Personalized Greetings

Before adding media to the balloon, please read the *Balloon Lift and Float Time Primer* first. Proceed to add media only after the ZEP-AIR™ balloon is fully inflated and fins attached. Refer to the *ZEP-AIR™ Ad Blimp Assembly Instructions*.
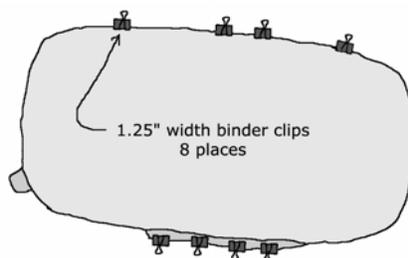
Use of large binder clips as shown above is helpful to hold down the balloon to facilitate the application of the media. Choose from the following media options.

Stick On Poster Letters

This is the easiest way to add a text only message. Paper letters with adhesive backing, packaged for creating posters are available in a variety of sizes colors and textures. Considering that the size and letter count is restricted by the balloon's lift ability, choose the light weight paper textures in two sizes. To check the weight for float ability, use a small paper clip with tape to attach the letter set to the balloon. Reduce the letter size of count until you are satisfied with the balloons' lift capacity. Then affix the letters.

Permanent Markers

Permanent markers are the easiest method and can be used liberally without the weight restrictions associated with the other media options. Add multiple layers to enhance contrast.

Paper Stickers/Labels

Paper labels are available in many sizes, colors and shapes, offering the greatest flexibility and convenience.

Avery.com has excellent label design software designed for lay persons which may be used online or downloaded for free to your PC, MAC or iOS and Android systems. You have the option to print yourself, create a PDF file which you can bring to your copy center for printing, or for select labels you may choose Avery to print and ship to you directly.

The *Avery Label Selector* is helpful to select from the numerous label choices. Click on the *Label Selector* link found at the bottom of the home page, listed under *Products.*

Transparent Stickers/Labels

This is the preferred method for a professional look and provides the greatest flexibility because computer generated artwork is printed onto a transparent clear label media just as it would be on paper. The suggested media is 8.5″ x 11″ or 3-1/3″ x 4″ Transparent Clear Labels for laser printers, available from ZEP-AIR.com or your local copy center. Generally, to facility affixing the printed graphic objects to the balloon, minimize wrinkles, and improve balloon lift and float times, the objects will be cut out to create stickers less than 4″ in size.

In lieu of general graphic design software, you may use the Avery Label Design software (Avery.com) to create a PDF file which can be printed yourself or at your local copy center. The only two large sized transparent clear Avery labels available are the 3.3″ x 4″ size, product numbers 15664 for laser, or 18664 for ink-jet. This is a suitable label size for minimizing wrinkles when applied to the balloon.

For the best results follow these steps.

ZEP-AIR™ Media Guidelines for Advertising and Personalized Greetings

(1) Determine the allowable number of 8.5″ x 11″ sized media sheets per balloon, based on balloon lift and float time. Refer to the primer provided on this. A determination simply based on location elevation (altitude) works in many instances. Refer to the table below.

Allowable Number of 8.5" x 11" Media Sheets		
Altitude Elevation	**Flying Blimp RC Blimp**	**Tethered Blimp AD Blimp**
up to 2000 ft	2 sheets	4 sheets
2000 ft to 4000 ft	1.5 sheets	3 sheets
4000 ft to 6000 ft	1 sheet	2 sheets

(2) Create the artwork with the intention of cutting around the edges of graphics and text snippets no larger than 4 inches in size. Creating stickers or decals in this way is important because it reduces the media weight and facilitates placement on the balloon surface while minimizing wrinkles. Usually, every graphic/text item is generated in duplicates or is mirrored for equal media coverage on both sides of the balloon. If you opt for different artwork on each side, do your best to equalize the total area of the stickers used for each side.

Scale each object size according to the percent helium content of gas used. For example, if using a helium-air mixture with 80% helium content, scale the artwork likewise, to 80% or fractionally 0.8 leaving at least 20% of the artwork canvas area blank.

Note that white areas in the artwork will translate to the reflective silver color of the balloon when the transparent label is affixed to the balloon.

(3) Print a proof on paper first.

(4) Print the approved artwork on the transparent media label using the proper media weight setting for laser printing. If the printer setting is not changed from the ordinary paper weight, the ink may not adhere to the label surface as it should. Include this request in your order instructions to your copy center. If you are using a personal laser printer, select the paper weight setting for labels or 220-256 GSM.

(5) Cut out the printed stickers and weight them on a gram or oz scale. Since nearly ½ of the weight is the white backing, the weight the balloon is required to lift is ½ the measured weight. Trim more if needed to keep the weight under the balloon lift ability determined.

(6) Tack the stickers in place. Peel back a corner of each cut-out, and using scissors remove the lifted corner of white backing. This will allow you to tack everything in place prior to permanently affixing.

(7) Permanently affix each sticker. Remove the remaining backing and starting from the tacked corner, apply finger pressure toward the center of the sticker and then fan out in radial strokes. This technique minimizes wrinkle formation.

(8) Finish by pressing out remaining bubbles or wrinkles.