



Meteorological Balloon

Our weather balloons are found at a wide array of meteorological institutions both in Japan and abroad, including at the Japan Meteorological Agency and the Ministry of Defense.

There is a close relationship between meteorological phenomenon and the environment; that relationship is something very important in the context of our lives. One way to observe meteorological phenomena is through radiosonde observations. Under the direction of the World Meteorological Organization, an agency of the United Nations, observational tools are suspended from balloons that are launched into the air (by signatory countries) at 12 PM and 12 AM GMT. Those balloons float to an elevation of about 30 km from the ground to observe the state of our atmosphere (in terms of pressure, temperatures, humidity, wind directions, wind speed and other factors). We manufacture the rubber balloons used for these observations.

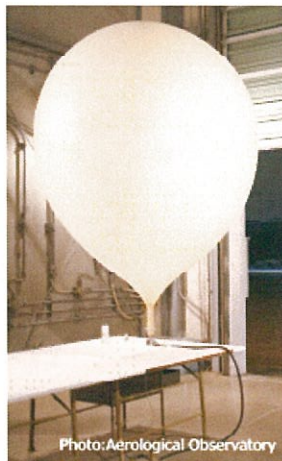
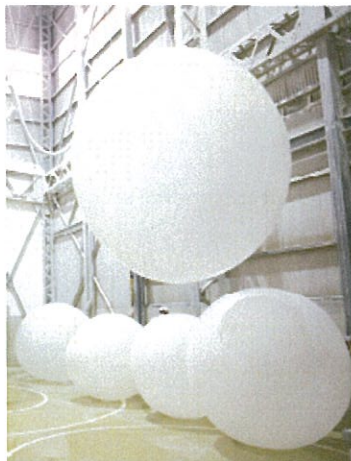


Photo:Aerological Observatory

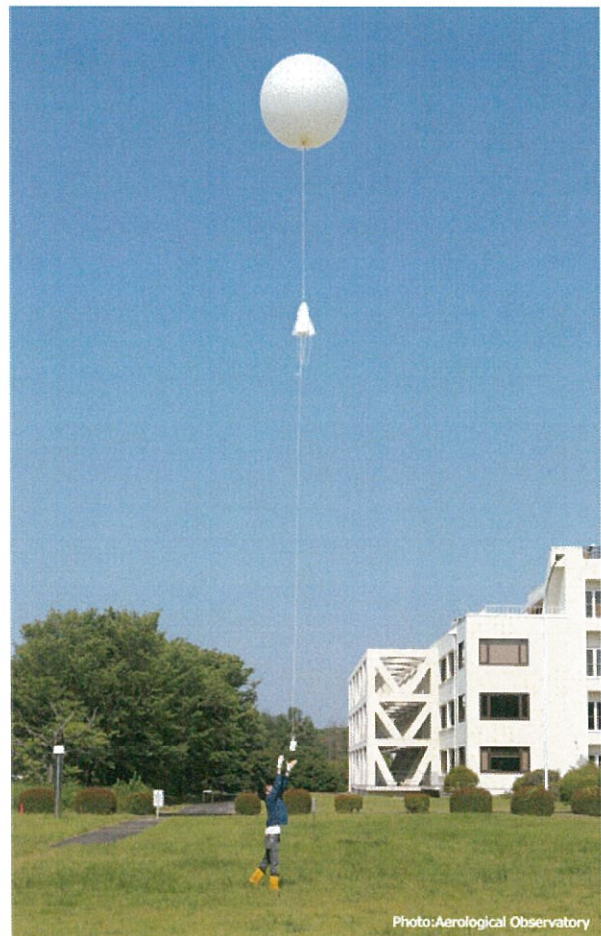


Photo:Aerological Observatory

TOTEX CORPORATION

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TOTEX Corporation commenced the manufacturing of meteorological balloons in 1937. The company devised the mold rotation system of manufacturing meteorological balloons in 1940 and continues to manufacture its products today employing the same process. The mold containing the latex mixture is rotated to form multilayered and extremely thin film to produce a strong and uniform thickness and also form maximum performance balloons. The system is prominent in producing quality balloons, although it calls for an increase of production cost.

Our air conditioned factory is equipped with highly automated production lines. Our skilled engineers and workers have accumulated years of experience and are thoroughly versed in production engineering. They are dedicated to maintaining total quality control (TQC) in the manufacturing of balloons and achieve the highest degree of production efficiency which sustains a constant quality to ensure maximum product performance.

The most distinguished policy characteristic of our company lies in the fact that the company confines its manufacturing to order production. Each of the balloons at every stage of production is under close quality controls and severe inspection, and from every production lot, samples are selected at random and subjected to bursting tests prior to shipment.

TOTEX meteorological balloons are available in two different types:

TA Type Balloons

The TA type was developed in 1940 and is made from natural rubber latex compounded with chemicals. It has a high elasticity modulus as well as high tear resistance. The robustness of rubber film allows fully gas inflated TA type balloons to retain its original spherical shape, making it particularly suitable for all weather purpose.

TX Type Balloons

The TX Type was first developed in 1988 and research continues in seeking a special latex compound with other chemicals in order to reach even in severe weather conditions the tropopause where temperature is lower than -75°C and altitudes exceed 10 hPa.

We shall be glad to suggest you suitable balloons upon receiving the following information from you:

- Purpose of observation and location
- Local time of observation (daytime or night?)
- Payload
- Nozzle lift or free lift
- Ascent rate
- Desired altitude

HOW TO HANDLE TOTEX METEOROLOGICAL BALLOONS

I. CONDITIONING



When handling balloons, put on cotton work gloves and whenever possible avoid touching the balloons with bare hands
Always cover a worktable with a sheet of soft material to protect the balloon film from a nail or other sharp object which can cause damage to the balloon and can result in lower performance.



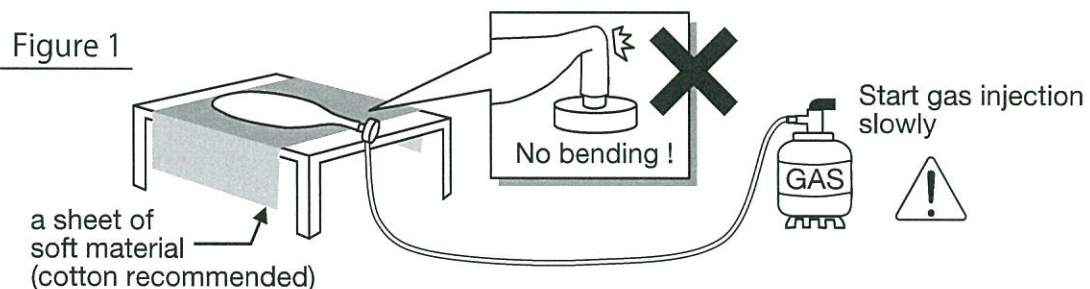
Work gloves and the protective sheet should be made from a material which cannot generate static electricity. This is especially important when using hydrogen as the inflation gas. Cotton is the recommended material.



Direct sunlight may cause some deterioration of the balloon film.
Please inflate balloons in a building with sufficient space.

II. HANDLING PROCESS(from gas injection to balloon release)

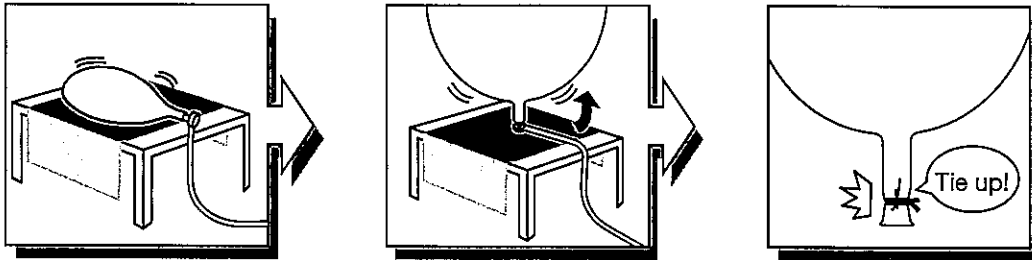
- ① Cover a worktable with a sheet of soft material (cotton recommended). Carefully open the plastic bag (do not use a sharp object). Remove balloon and open fully on the worktable with the balloon neck horizontal towards the inflation nozzle. Be sure to check that there are no bends or twists in the balloon neck. See figure 1.
Slowly start the gas injection. A sudden expansion of the balloon may cause weak spots and damage the balloon which can reduce the balloon performance.



- ② The balloon rate of inflation should be about 5 minutes per cubic meter. A small adjustment to this may be required depending on the balloon size.
- ③ When the balloon is filled half-way, the balloon neck will become vertical. Hold the filling nozzle to support the neck and avoid sudden bending. See figure 2.

- ④ When the balloon has lifted the required “free lift” secure the balloon neck tightly with a string. Remove the nozzle and secure the equipment or instrumentation to the balloon neck. Release the balloon within 15 minutes after completion of balloon inflation.

Figure 2



III. HOW TO STORE BALLOONS



Balloons should be stored inside a building and away from direct sunlight. All balloons should be kept in the original packaging and stored in a room at temperatures of 15-25 Centigrade. Ultra-violet rays may cause reduced performance. Once a balloon is taken out of the original packing, avoid exposing it to the air, the circulation of air and sunlight. Please use it immediately.



When stored under the proper conditions, the balloon shelf-life is 24 months after shipment. For best performance results, we recommend that the balloons be used on a first-in, first-out basis.