



# Precautions to ensure safe usage

The precautions given below are intended to ensure safe and correct use of the products.  
Note that certain restrictions apply to use of these products. Failure to observe these could result in injury or property damage.

 <b>Warning</b>	A potentially hazardous situation which could result in death or serious injury.
 <b>Caution</b>	A dangerous situation which could result in minor or medium injury and/or in which only property damage is foreseen.

 **Warning** TOYOX products have been developed and manufactured for general industrial applications.

For applications that require safety, confirm in advance.

Never use for implant or injection application or other applications where there is a possibility of the product partially remaining in the body.

ToyoX makes no guarantee of the adaptability or safeness related to such applications.

Please read the Handling Precautions carefully before use.

Note: See the terminology glosses on our website for words marked with a ※.

## TOYOTOP-E Hose

1. Do not use outdoors or in a place subject to constant direct sunlight. Ultraviolet light can cause the surface to become sticky and susceptible to cracking.
2. Usable fluids include powder such as resin pellets. Do not use for other fluids.
3. **Do not use for food or beverages.**
4. Please note that compounding agents such as ※<sup>2</sup> **plasticizers** could be extracted / eluted from the hose depending on use conditions. Please confirm the use conditions and the effects on your products before use.
5. Use the products within their working temperature range. Depressurization deformation temperature is the temperature at which the hose deforms when its interior (in a straight condition) is depressurized to -0.1 MPa (-760 mmHg). It is not the hose's use limit temperature.
6. Use the products within their working pressure range.
7. Refer to the "Use condition reference values for TOYOX vacuum hoses" (Terms explained, Fig. 1) regarding guidelines for negative pressure use ranges.
8. Use hoses at bend angles larger than their ※<sup>3</sup> **minimum bending radius**. Angles smaller than the minimum bending radius may result in hose overbending or lower pressure resistance.
9. Powders and granular materials may cause wear. Use a hose with as large a bending radius as possible.
10. This hose includes antistatic compounds; we recommend grounding the conductive threads. When grounding the conductive threads, it is necessary to connect them to grounded equipment or buildings with dedicated ground clips or ground lines.
11. When using conductive threads, please check their conductivity regularly with a tester. Conductive threads are for antistatic purposes only; be sure never to run current through them for any other reason.
12. Keep the hose away from open flame. Do not use in the vicinity of ignitable objects (gasoline / solvents etc.).
13. The life of hoses will be greatly affected by the physical properties, temperature, and flow rates of the fluid as well as by the frequency of pressurization and depressurization. If any of the following problems or similar signs are found in the pre-work or regular inspections, immediately cease use and replace the hose.
  - Abnormalities near the coupling: Localized stretching, bending, leakage, bulging, or shallow insertion into the coupling
  - External damage: Large scratches in the outer surface, cracking, water infiltrating the reinforcement layer, or cracks in the reinforcement material
  - Internal abnormalities: Bulging or ※<sup>5</sup> **separation** of the inner surface, or wear that leads to exposure of the hose reinforcement thread.  
Note: In the case of abnormalities on the interior or exterior surface, hose scrapings and fragments of hose reinforcing material may mix into the fluid inside the hose.
  - Other abnormal changes (stiffening, ※<sup>6</sup> **swelling**, cracking, bulging, etc.)
14. Do not store outdoors or in a place subject to direct sunlight. This may cause the quality of the hose surface to deteriorate, becoming sticky and/or susceptible to cracking. Store in a low-humidity, well-ventilated place. Store keeping the inside of the hose free from foreign matter and dust.
15. Do not store where the hose will make contact with other PVC products or near rubber products.
16. When cutting a hose, make sure that the edge face of the hose is cut perpendicularly. If it is not perpendicular, the hose may leak or become disconnected.
17. Use hose nipples suitable for the size of the hose. Do not use hose nipples with damaged or rusted surfaces.
18. When needing to mount hose clamps, use spiral wire clamps. Fastening hose clamps too tightly may damage the inner or exterior surface of the hose and cause it to rupture.
19. In the case of cutting the hose, the exterior reinforcement coil may be left with sharp edges, causing injury. Please take sufficient care. If the exterior reinforcement coil of the hose is sharp-edged or protruding, treat its edges with scissors or pliers.
20. Retighten hose clamps as necessary. Deformation of the plastic hose clamp fastening can cause fluid leakage and hose disconnection.
21. Do not incinerate the hose. The incineration may generate toxic gases or damage incinerators; therefore, the hose should be treated as industrial waste for disposal purposes.
22. The hose should be disposed of in accordance with the requirements of the local region.