



# 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 ※.

## HYBRID TOYOFOODS-N Hose

The TC6-CSN coupler, TC6-ESN adapter, and TC6-FN FERRULE coupling (hereafter referred to as dedicated couplings) are dedicated couplings for HYBRID TOYOFOODS-N Hose. Use with a product other than HYBRID TOYOFOODS-N Hose may cause leakage, disconnection, etc.

### ① Notes for using the hoses and couplings

1. The hose can be used for water, drinking water, food, oils, chemicals, and powder, but when using it with oils, chemicals, or powder, confirm the chemical resistance data on the ToyoX website or consult with our Customer Advice Center.  
※ Do not use for fuel oil (heavy oil, kerosene (light oil), kerosene (lamp oil), gasoline) or solvents.
2. Liquid left inside hoses may be affected by a plastic smell, making them unsuitable for use. Always check beforehand.  
Clean the inside of the hose before using it to transport drinking water or food products.
3. 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.
4. 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.
5. Use the products within their working pressure range.
6. Refer to the "Use condition reference values for TOYOX vacuum hoses" (Terms explained, Fig. 1) regarding guidelines for negative pressure use ranges.
7. 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.
8.  **Warning** Do not allow anything other than the inner surface of the couplings or hose to come in contact with fluids (food, etc.), because the fluids may permeate the hose reinforcement layer or remain inside the couplings, and bacteria may propagate (attach to the parts) or the hose may deteriorate. Also, dust, hose fragments (reinforcement material) and ink adhering to the outer surface may be mixed in.
9. Powders and granular materials may cause wear. Use a hose with as large a bending radius as possible.  
Antistatic measures are not provided.
10. Keep the hose away from open flame.
11. 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, discoloration of the reinforcement layer, etc.)
12. Do not hit the coupling with a hammer or similar tool. The coupling may be damaged and the hose may leak.
13. Check to confirm the couplings are free of residual pressure before disconnecting.
14. For the TC6-CSN coupler, avoid pulling or dragging the hoses on the floor. Doing so may cause the cam arms to unlock.  
It is recommended to move while holding the coupler.
15. Do not connect TC6-CSN couplers or TC6-ESN adapters to couplings made of differing materials. Connection of couplings with different materials may cause fluid leakage, corrosion (electrocorrosion), or trouble opening and closing cam arms.
16. Do not apply external force (impact/vibration) to coupling units or cam arms.

### ② Notes for storage

1. 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.
2. When storing couplings, use KAMLOK dust plugs and dust caps to prevent dust accumulation, damage or deformation of the sealing surface.
3. Do not store where the hose will make contact with other PVC products or near rubber products.

### ③ Notes for assembly

1. 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.
2. Use hose nipples suitable for the size of the hose. Do not use hose nipples with damaged or rusted surfaces.
3. **Take sufficient care when cutting hoses, as the edge of the reinforcement coil may cause injury.**
4. **We recommend using TOYOX dedicated hose couplings.**  
Tightly fastening hose with wire may damage the inner or exterior surface of the hose and cause it to rupture.
5. Check to confirm that a gasket has been placed inside the TC6-CSN coupler before use.
6. Do not scratch the insertion part of the coupling with a cutter, etc. The hose may leak.
7. When tightening bolts, do not use an impact screwdriver. This may cause damage to the clamp screws.
8. Tighten the bolt until there is no gap with the clamp. If it is not tightened sufficiently, the hose may leak or become disconnected.
9. Insert the hose and rubber cap to the specified position as shown in the instruction manual.  
If it is not inserted sufficiently, the hose may leak or become disconnected.
10. When reusing the coupling, the hose and rubber cap must be replaced. If it is not replaced, the hose may leak or become disconnected.

### ④ Notes for disposal

1. 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.
2. The hose should be disposed of in accordance with the requirements of the local region.