

Multi-Purpose/Chemical Resistant Hose | For customers who need a very flexible chemical-resistant tubing.

Flexible Fluorine (ETFE) Resin Tubing(Ultra Soft Type)

[Model Number : E-SJUS-(I.D.×O.D.)]

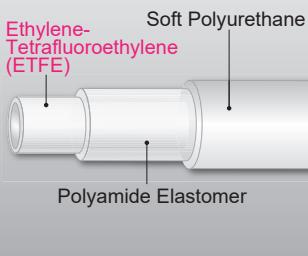


Applications · Fluids

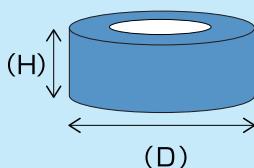


- For Industrial Ink-Jet Printers (For Ink-Supplying Pipes)
- For Transferring Paints, Solvents, and Adhesives
- For Transferring Chemicals used in Laboratory Equipment
- For Transferring Chemicals used in Semiconductor-Related Devices and Flat Panel Display (FPD) Manufacturing Devices
- For Transferring Fatty Acid Ester such as Biofuel (BDF)
- For Transferring Chemical and Industrial Wastes
- For Transferring Alcohol, Cosmetics, and Chemicals
- For Transferring Chemicals used in Medical Equipment, Endoscope, and so on
- For Transferring Chemicals used in Manufacturing Fuel Cell and Pure Water
- For Filling Line of Paints and Adhesives
- For Filling Line of Fragrance, Colorant, and Additive
- For Air Supplying Pipes at Clean Room

(Materials / Structure)



(Packing Dimension)



Standard · Packing Information

| Model Number | Inch (Inside Diameter) (*1) | I.D. × O.D. mm | Working Pressure MPa | | Minimum Bend Radius at 20°C mm | Temperature Range °C | Standard Length m | Product Weight kg/roll | Color | Packing Dimension(*2) | | | |
|------------------|--------------------------------|-------------------|----------------------|---------|--------------------------------|----------------------|-------------------|------------------------|-------|-----------------------|-----------------|---------------|---------------------|
| | | | at 20°C | at 80°C | | | | | | Packing | Diameter (D) cm | Height (H) cm | Weight/roll kg/roll |
| E-SJUS-2×4 | 5/64" | 2×4 | 0 ~ 0.5 | | 30 | | 20 | 0.24 | Clear | Plastic Bag | 23.5 | 5 | 0.24 |
| E-SJUS-3×5 | 1/8" | 3×5 | | | 35 | | 100 | 1.17 | | Cardboard Box | 38.5 | 15 | 1.69 |
| E-SJUS-1/8"×1/4" | 5/32" | 3.18×6.35 | 0 ~ 0.4 | | 50 | | 20 | 0.30 | Clear | Plastic Bag | 25.5 | 5 | 0.30 |
| E-SJUS-4×6 | 11/64" | 4×6 | | | 50 | | 100 | 1.60 | | Cardboard Box | 38.5 | 15 | 2.10 |
| E-SJUS-4.3×6.4 | 1/4" | 4.3×6.4 | 0 ~ 0.3 | | 50 | | 20 | 0.60 | Clear | Cardboard Box | 26 | 5 | 0.80 |
| E-SJUS-6×8 | 1/8" | 6×8 | | | 75 | | 100 | 2.90 | | Cardboard Box | 38.5 | 15 | 3.50 |
| E-SJUS-1/4"×3/8" | 1/4" | 6.35×9.53 | 0 ~ 0.4 | | 80 | | 20 | 0.40 | Clear | Plastic Bag | 26 | 5 | 0.60 |
| E-SJUS-8×10 | 5/16" | 8×10 | 0 ~ 0.15 | | 100 | | 100 | 2.00 | | Cardboard Box | 38.5 | 15 | 2.50 |
| | | | | | | | 20 | 0.44 | Clear | Cardboard Box | 26 | 5 | 0.64 |
| | | | | | | | 100 | 2.30 | | Cardboard Box | 38.5 | 15 | 2.80 |
| | | | | | | | 20 | 0.55 | Clear | Cardboard Box | 28 | 5 | 0.80 |
| | | | | | | | 100 | 2.80 | | Cardboard Box | 46 | 16 | 3.50 |
| | | | | | | | 20 | 0.98 | Clear | Cardboard Box | 34 | 5 | 1.20 |
| | | | | | | | 100 | 4.90 | | Cardboard Box | 46 | 21 | 5.70 |
| | | | | | | | 20 | 0.75 | Clear | Plastic Bag | 34 | 5 | 0.75 |
| | | | | | | | 100 | 3.60 | | Cardboard Box | 46 | 26 | 5.00 |

*1: Please note that inch size is approximate, which is not equal to milliunit.

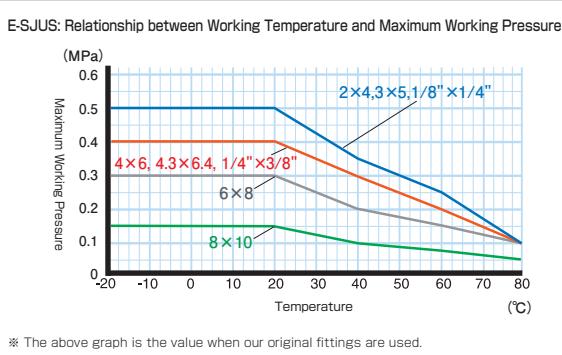
*2: "Diameter (D)" × "Height (H)" means "External Dimensions of Cardboard Box (D)" × "Height (H)." "

Characteristics and Functions

Non-PVC Non-Adhesiveness Chemical Resistance Solvent Resistance Transparency Flexibility Oil-Proof Alcohol Resistant Cold Resistance

- Chemical Resistance** · Since the inner layer is made of ETFE fluorine resin, E-SJUS is resistant to most of the chemical substances. For more information, please refer to chemical resistance data.
- Flexibility** · Due to the laminated structure, compared with the conventional single-layer fluorine tubing, E-SJUS is superior in flexibility. This improves your work efficiency.
- Hard to Break** · Unlike the conventional single-layer fluorine tubing, E-SJUS is hard to break. (Even if it breaks, you can restore its shape to some extent.)
- Non-Adhesiveness** · Since fluorine resin is superior in water-proof and non-adhesiveness, you can wash out the fluids very easily.
- Abrasion Resistance** · Fluorine resin (inner layer) shows higher levels of abrasion resistance. Thus, you can transfer chemical slurry.
- Plasticizer-Free** · E-SJUS does not contain plasticizer (an elution material) at all. E-SJUS is an oil-free tubing.
- Non-PVC** · E-SJUS is made of a non-PVC material.
- Low Elution and Low Odor** · Since this tubing contains very low levels of elution and odor, it is recommended for use in transfers of food, beverage, and cosmetics.
- High Purity** · Fluorine resin does not contain any additives such as plasticizer, so this tubing is suitable for transferring high purity chemical fluids.
- Easy to Cut** · Since we print the cut mark on the tubing every meter, it is easy to cut the length you would like to.
- Transparency** · E-SJUS enables you to check the fluid very easily.
- Green Procurement** · E-SJUS is compliant with RoHS2 requirements (directive 2011/65/EU:RoHS2). (RoHS 2 free products mean that they do not contain or below the threshold of 10 substances.)
- Original Fittings** · By using our original fittings, you can avoid accidents which are caused by incorrect choices of hose and fittings.

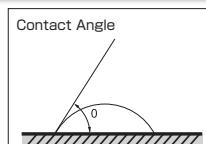
Technical Information



Non-Adhesiveness Comparison Data

Non-adhesiveness and smoothness, which are peculiar to fluorine resin, make it easier to wash out the fluid. You can check the data about critical surface tension and contact angle against water.

| Resins | Critical Surface Tension (dyne/cm) | Contact Angle for Water (θ) |
|-------------------------------------|------------------------------------|-----------------------------|
| Ethylene-Tetrafluoroethylene (ETFE) | 22 | 96 |
| Polyvinylidene Fluoride (PVDF) | 25 | 82 |
| High Density Polyethylene | 31 | 73 |
| Hard Vinyl Chloride | 39 | 68 |
| PET | 43 | - |
| Nylon | 46 | 54 |



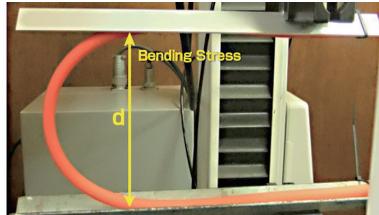
Washing out the inks (by organic solvents) stuck inside the hose
 Test Piece 1 : Inner Layer: Nylon - Solvent: Transfer Hose (E-SV)
 Test Piece 2 : Inner Layer: Ethylene-Tetrafluoroethylene - Flexible Fluorine (ETFE) Resin Yarn Reinforced Hose (E-SJB)

| Test Conditions | Kind of Ink | | Solvent-Based Inks | |
|-----------------|----------------------|------------------------------|--------------------|-------------------|
| | Ink Inclusion Period | 7 Days (at Room Temperature) | Cleaning Solution | Ethyl Acetate |
| Washing Methods | Cleaning Period | 20 Seconds | Pressure | Less than 0.01MPa |
| | | | | |



Flexible Fluorine (ETFE) Resin Hose is excellent in non-adhesiveness of the inner layer, so you can reduce washing time and save cleaning solutions and labor costs.

(Bending Stress Data)



Bending Stress Test

- The elastic force generated when the tube is bent into a U-shape as shown in the photograph is measured.
- ※ "d"=Distance : 50mm

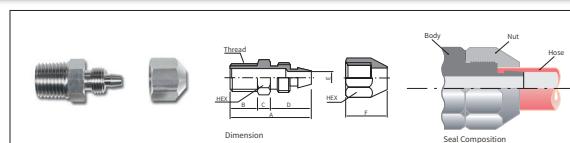
| Test Sample | Bending Stress (N/50mm) |
|-------------|-------------------------|
| E-SJUS-4x6 | 0.8 |
| E-SJ-4x6 | 3.5 |

The lower the value of bending stress is, the more flexible it is.

HAKKO Original Fittings

| Model Number | Body | | | | | Nut | | Weight | Applicable Hose | |
|------------------|------|----|---|------|-----|--------|-----|--------|-----------------|--------------|
| | A | B | C | D | E | Thread | HEX | | | |
| E-FTS-2 x 4-R1/8 | 24.5 | 10 | 4 | 10.5 | 1.7 | R1/8 | 10 | 10.5 | 10 | E-SJUS-2 x 4 |
| E-FTS-3 x 5-R1/4 | 30 | 12 | 5 | 13 | 2.5 | R1/4 | 14 | 13 | 12 | E-SJUS-3 x 5 |
| E-FTS-4 x 6-R1/4 | 31 | 12 | 5 | 14 | 3.5 | R1/4 | 14 | 14 | 14 | E-SJUS-4 x 6 |
| E-FTS-6 x 8-R1/4 | 33 | 12 | 5 | 16 | 5.5 | R1/4 | 17 | 16 | 14 | E-SJUS-6 x 8 |

※ We do not have the original fittings for E-SJUS-4.3x6.4, E-SJUS-8 x 10, E-SJUS-1/8x1/4" and E-SJUS-1/4"x3/8".



Material: 316 L Steel Use Stainless (Body) and 304 Steel Use Stainless (Nut)



- *Due to the laminated structure tubing, please use the joints to seal an inner surface of the hose.
- *Please do not use the joints to seal an outer surface of the hose. This may result in the bursting or coming off from the hose.
- *When you use our products, please refer to "Precautions for Use" available on our webpage and product catalog.
- *In terms of chemical resistance, please refer to "Chemical Resistance Data" available on our webpage and product catalog.
- *Although the inner layer is made of fluorine, please make sure whether or not E-SJUS is usable for high purity fluids before you use.
- *This product has a thinner inner layer than E-SJ: Flexible Fluorine (ETFE) Resin Tubing. Even if the inner layer has resistance to fluid, it may permeate the inner layer and swell or deteriorate depending on the operating conditions (high temperature, high pressure, etc.).

Contact us if you have any inquiries about HAKKO products.

HAKKO

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HAKKO CORPORATION

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