Multi-Purpose/Chemical Resistant Hose For customers who transfer UV inks, UV-based paints which become harden inside the tube or who have trouble in changing ink viscosity.

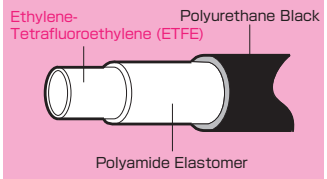
Flexible Fluorine (ETFE) Resin Tubing BLACK Inch Type

[Model Number : E-SJ-(I.D.×O.D.)-BK]

UV Paint UV Ink Solvent Chemical

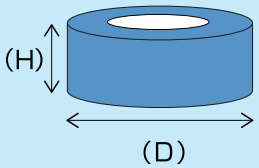
Applications • Fluids

〔Materials / Structure〕



- For Industrial Ink-Jet Printers (For UV Ink Supplying Pipes)
- For Transferring UV-based Paints and Solvents of the Painting Equipment
- For Transferring Chemicals used in Laboratory Equipment
- For Transferring Chemicals used in Semiconductor-Related Devices and Flat-Panel Display (FPD) Manufacturing Devices
- For Filling Line of UV Paints and UV-based Adhesives

〔Packing Dimension〕



Standard • Packing Information

Model Number	I.D.	O.D.	Working Pressure MPa		Minimum Bend Radius at 20℃	Temperature Range	Standard Length	Net Weight (*1)	Color	Packing Dimension(*2)			
										Packing Form	Diameter (D)	Height (H)	Gross Weight
	mm	mm	at 20℃	at 80℃	mm	℃	m	kg/Roll			cm	cm	kg/Box
E -SJ-1/8" × 1/4"-BK	3.18	6.35	0～0.6		20		20	0.6		PE Bag・Paper Box	38.5	5.5	0.8
							100	3.0		PE Bag・Paper Box	38.5	15.0	3.5
E-SJ-3/16"×1/4"-BK	4.57	6.35	0～0.5	0～0.2	45	−20～80	20	0.4	Black	PE Bag・Paper Box	38.5	5.5	0.6
							100	1.9		PE Bag・Paper Box	38.5	15.0	2.4
E -SJ-1/4" × 3/8"-BK	6.35	9.53	0～0.6		45		20	1.0		PE Bag・Paper Box	38.5	5.5	1.2
							100	5.1		Paper Bobbin・Paper Box	38.5	15.0	6.0

*1: Please note that our product has the allowance, so Net Weight will vary slightly depending on the variation of the product dimension (Inside Diameter, Outside Diameter, and Length).
*2: "Diameter (D)" × "Height (H)" means "External Dimensions of Cardboard Box (D)" × "Height (H)."

HAKKO CORPORATION
Head Office Unity Forum 5F, 42-18, 1-Chome Itabashi, Itabashi-Ku, Tokyo 173-0004, Japan TEL (81) 3-3963-5381 FAX (81) 3-3961-4400
Osaka Sales Office Akatsuki Building 7F, 13-45, Toyotsu-cho, Suita-shi, Osaka 564-0051, Japan TEL (81) 6-6310-6880 FAX (81) 3-3961-4400
E-mail hakko@eightron.co.jp URL https://eightron.co.jp/English

ISO 9001:2008
ISO 14001:2004

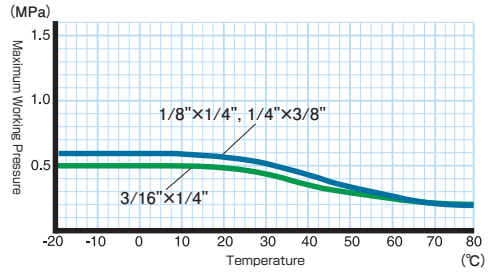
Characteristics and Functions

UV Cut | Solvent Resistance | Non-PVC | Non Adhesiveness | Chemical Resistance | Low Elution | Flexibility

- **UV Cut**···By cutting ultraviolet, E-SJ-BK is suitable for transferring UV-based paints, adhesives, and inks.
- **Chemical Resistance**···Since the inner layer is made of ETFE fluorine resin, E-SJ-BK is resistant to most of the chemical substances. For more information on chemical resistance data, please refer to our corporate website.
- **Flexibility**···Due to the laminated structure, compared with the conventional single-layer fluorine tubing, E-SJ-BK is superior in flexibility. This improves your work efficiency.
- **Hard to Break**···Unlike the conventional single-layer fluorine tubing, E-SJ-BK 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.
- **Plasticizer-Free**···E-SJ-BK does not contain plasticizer (an elution material) at all. E-SJ-BK is an oil-free tubing.
- **Non-PVC**···E-SJ-BK is made of a non-PVC material.
- **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.
- **Green Procurement**···E-SJ-BK is compliant with RoHS2 requirements.

Technical Information

E-SJ-BK: Relationship between Working Temperature and Maximum Working Pressure

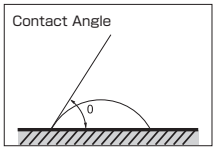


※ The above graph is the value when our original fittings are used.

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.

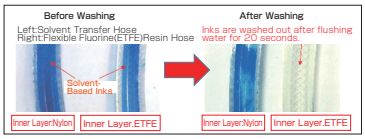
Resins	Critical Surface Tension (dyne/cm)	Contact Angle for Water (θ)
Ethylene-Tetrafluoroethylene (ETFE)	22	96
Polyvinylidene Fluoride (PVDF)	25	82
High Density Polyethylene	31	73
Hard Vinyl Chloride	39	68
PET	43	-
Nylon	46	54



[Critical Surface]
The surface Tension of the assumed liquid which has the contact angle of zero against solid.

Washing out the inks (by organic solvents) sticked 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)
Washing Methods	Cleaning Solution	Ethyl Acetate
	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.

(Flexibility Comparative Data)

- This is one indication of flexibility. Flexibility varies depending on hose (tubing).
- The larger the amount of deflection is, the more flexible the hose (tubing) is.

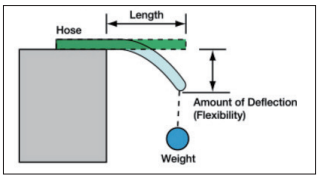
※The lower the minimum bend radius value is, the harder the hose (tubing) is.

Test Method for Amount of Deflection (Flexiblity)

Add a 50 gram weight to the end of the tubing for one minute. Then, measure the amount of deflection. (The test piece goes through the annealing step in advance to make it straight.)
※③ PTFE Tubing and ④ PFA Tubing are not our products.

(Test Temperature:20℃)

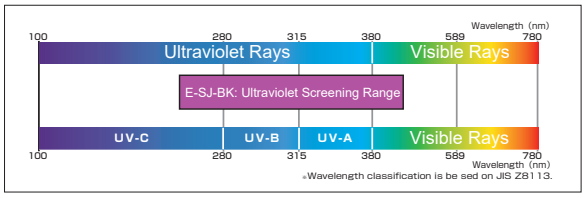
Test Sample	Minimum Bend Radius (mm)	Amount of Deflection (mm)
① **E-PD-4 × 6**	23 (Catalog Value : 25)	28
② **E-SJ-4 × 6**	23 (Catalog Value : 25)	31
③ PTFE Tubing (4 × 6)	20	7
④ PFATubing (4 × 6)	23	6



(UV Penetration Data)

- Test Sample : E-SJ- 4×6-BK
- UV Wavelength Range : 260nm 450nm
- Test Machine : Spectrophotometer U-4100 (Hitachi, Ltd)

Test Result: 99% Ultraviolet Impermeability



Cautions for using

⚠ *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.
*We do not have the original fittings for "Flexible Fluorine (ETFE) Resin Tubing BLACK Inch Type."
*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-SJ-BK is usable for high purity fluids before you use.
*Although the inner layer is resistance to fluids, but depending on working environments, the fluids would be permeated through the inner layer, resulting in the danger of swelling and degradation of the middle or outer layer.

Contact us if you have any inquiries about HAKKO products.

NISHIYAMA Corporation of America

111 GREAT NECK ROAD, SUITE 510
GREAT NECK, N.Y. 11021-5408
TEL (1) 516-466-7570
FAX (1) 516-466-7572
EMAIL sales@nishiyama-usa.com
URL: **https://nishiyama-usa.com**

HAKKO CORPORATION

HAKKO CORPORATION
HEAD OFFICE / SALES DEPARTMENT
Unity Forum 5F, 42-18, 1-Chome Itabashi, Itabashi-Ku, Tokyo 173-0004, Japan
TEL (81) 3-3963-5381 FAX (81) 3-3961-4400
OSAKA OFFICE
Akatsuki Building 7F, 13-45, Toyotsu-cho, Suita-shi, Osaka 564-0051, Japan
TEL (81) 6-6310-6880
SAITAMA FACTORY・AKITA FACTORY
URL: **https://eightron.co.jp/English**