

# HALAR®

- Meets UL 2024
- VW-1, FAR 25 Approved
- Expands Up To 150%
- Resists Gasoline And Engine Chemicals
- Cut And Abrasion Resistant
- Easy To Install



**Cut Cleanly  
Hot Knife**

## Material HT

Ethylene-chlorotrifluoroethylene

## Grade

HTN

## Monofilament Diameter

.011"

## Drawing Number

TF001HT-WD



[www.techflex.com](http://www.techflex.com)

800.323.5140 • 973.300.9242 • fax: 973.300.9409  
104 Demarest Road • Sparta, NJ 07871

## Put-Ups

Nominal Size	Part #	Expansion Range		Bulk Spool	Shop Spool	Available Colors	Lbs/ 100'
		Min	Max				
1/8"	HTN0.13	3/32"	1/4"	1,000'	225'	2	0.25
1/4"	HTN0.25	1/8"	7/16"	1,000'	200'	2	0.38
3/8"	HTN0.38	3/16"	5/8"	500'	125'	2	0.86
1/2"	HTN0.50	1/4"	3/4"	500'	100'	2	1.10
3/4"	HTN0.75	1/2"	1 1/4"	250'	75'	2	1.70
1"	HTN1.00	5/8"	1 5/8"	250'	65'	2	2.20
1 1/4"	HTN1.25	3/4"	1 3/4"	250'	50'	2	2.60
1 3/4"	HTN1.75	1 1/4"	2 3/4"	200'	30'	2	4.40
2"	HTN2.00	1 1/2"	3 1/2"	200'	50'	2	4.60

## Very Low Outgassing, Self-Extinguishing UL-2024 Plenum Rated Sleeving

HALAR® (HT) self-extinguishing sleeving is used where flammability, high temperature endurance and low outgassing are primary concerns. HT is braided from 11 mil ethylene chlorotrifluoroethylene (ECTFE) copolymer monofilament.

Because of its low flame spread and smoke generation properties, HT has received UL 2024 and NFPA 262 plenum listings, UL flame resistance rating of VW-1 and exceeds automotive industry requirements of FMVSS 302, as well as aviation industry requirements of FAR 25.

HT resists a wide range of corrosive chemicals and organic solvents, including strong acids, chlorine and aqueous caustics. HALAR® ECTFE also maintains useful properties on exposure to Cobalt 60 radiation at doses up to 200 megarads.

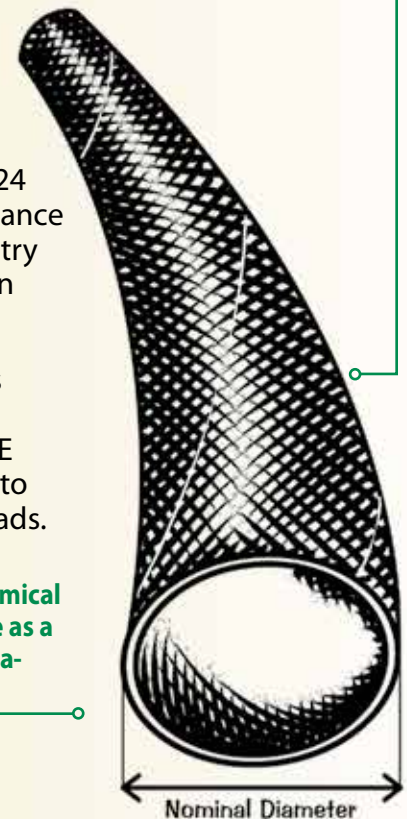
**Halar's low outgassing, as well as its heat, chemical and radiation properties, make it ideal for use as a component in technologically advanced applications.**

Colors Available:



White with Black Tracer (TW)  
and Black with White Tracer (TB)

**Colors Available:**  
2 =TW and TB



**VW-1 Plenum FAR-25**



**HALAR®**



**Abrasion Resistance**  
Medium

**Abrasion Test Machine**  
Taber 5150

**Abrasion Test Wheel**  
Calibrase H-18

**Abrasion Test Load**  
500g

**Room Temperature**  
71°F

**Humidity**  
58%

**Material Destroyed**  
600 Test Cycles

**Pre-Test Weight**  
6,354.9 mg

**Post-Test Weight**  
5,922.8 mg

**Test End Loss Of Mass**  
**Point Of Destruction**  
432.1 mg



Rating \_\_\_\_\_ FAR 25, VW-1



## Chemical Resistance

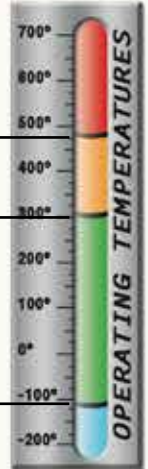
1=No Effect    4=More Affected  
2=Little Effect    5=Severely Affected  
3=Affected

Aromatic Solvents	1
Aliphatic Solvents	1
Chlorinated Solvents	1
Weak Bases	1
Salts	1
Strong Bases	1
Salt Water 0-S-1926	1
Hydraulic Fluid MIL-H-5606	1
Lube Oil MIL-L-7808	1
De-Icing Fluid MIL-A-8243	1
Strong Acids	1
Strong Oxidants	1
Esters/Keytones	2
UV Light	1
Petroleum	1
Fungus ASTM G-21	1
Halogen Free	No
RoHS	Yes
SVHC	

**Melt Point**  
ASTM D-2117  
482°F (250°C)

**Maximum Continuous**  
Mil-I-23053  
302°F (150°C)

**Minimum Continuous**  
-103°F (-75°C)



## PHYSICAL PROPERTIES

**Monofilament Diameter** \_\_\_\_\_ .011  
ASTM D-204

**Flammability Rating** \_\_\_\_\_ FAR 25, VW-1  
FMVSS-302 Approved

**Recommended Cutting** \_\_\_\_\_ Hot Knife

**Colors** \_\_\_\_\_ 4

**Wall Thickness** \_\_\_\_\_ .028

**Tensile Strength (Yarn)** \_\_\_\_\_ 4.3  
ASTM D-2256 Lbs

**Specific Gravity ASTM D-792** \_\_\_\_\_ 1.68

**Moisture Absorption** \_\_\_\_\_ .02  
% ASTM D-570

**Hard Vacuum Data ASTM E-595 at 10-5 torr**

**TML** \_\_\_\_\_ .18

**CVCM** \_\_\_\_\_ .02

**WVR** \_\_\_\_\_ 0

**Smoke D-Max** \_\_\_\_\_ 94  
ASTM E-662

**Outgassing** \_\_\_\_\_ Low

**Oxygen Index** \_\_\_\_\_ 64  
ASTM D-2863