

## PERSONAL PROTECTIVE EQUIPMENT LABORATORIES

### RESEARCH & DEVELOPMENT, TESTING, EVALUATION, EXPERTISE

CTT Group is your service center dedicated to textile performance evaluation, specification compliance, comfort evaluation and quality measurements.

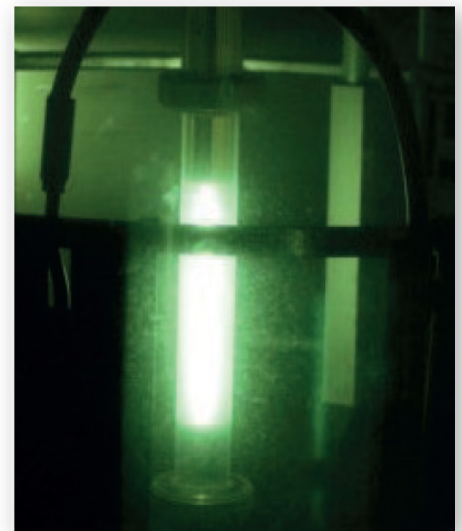


#### ■ FLAME RESISTANCE

- FlashFire Man  
ASTM F1930, ISO 13506
- Flame-resistant garments for protection of industrial personal against flash fire  
NFPA 2112
- Workwear for protection against hydrocarbon flash fire  
CAN/CGSB 155.20
- Structural and proximity fire fighting  
NFPA 1971
- Wildland fire fighting  
NFPA 1977, CAN/CGSB 155.22
- Wearing apparel for use by electrical workers exposed to momentary electric arc and related hazards  
ASTM F1506



- Arc and flame resistant rainwear  
ASTM F1891, F2733
- Electrical safety in the workplace  
NFPA 70E
- Flame resistance of textiles (vertical test)  
ASTM D6413, CAN/CGSB 4.2 No. 27.10
- Measurements of flame spread properties of vertically oriented specimens  
ISO 6941
- Thermal protective performance of materials for clothing  
ASTM D4108, CAN/CGSB 4.2 No. 78.1
- Determination of heat transmission on exposure to both flame and radiant heat  
ISO 17492



- Thermal protective performance of material for protective clothing for hot surface contact  
ASTM F1060
- Radiant protective performance of flame resistant clothing material  
ASTM F1939
- Unsteady-state heat transfer evaluation of flame resistance materials for clothing with continuous heating  
ASTM F2700
- Protective clothing, protection against heat and flame  
ISO 15025

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### ■ COMFORT

- Thermal insulation
- Breathability
- Total heat loss (THL)
- Windproofness
- Water resistance
- Waterproofness
- Water repellency
- UV-Proofness (UPF)

### ■ HIGH-VISIBILITY APPAREL

- Performance of highvisibility safety apparel  
ANSI/ISEA 107
- Performance highvisibility  
CSA Z96, ISO 20471
- Background materials
- Retroreflection measurement
- Garment design

### ■ TOXICITY

- Formaldehyde content
- pH
- Heavy metals
- Lead content
- Phthalates
- VOC

### ■ CHEMICAL

- Specialized equipment such as:  
HPLC-MS  
GC-MS  
HS GC-MS  
TD GC-MS  
FT-IR
- Chemical exposure, permeation, durability to challenge chemicals  
ASTM F903

### ■ ACCELERATED AGEING

- Xenon & Carbon Arc  
ASTM G155
- Fluorescent tube  
ASTM G154
- Salt Fog  
ASTM B117
- Ageing in climatic chamber (T°C RH)
- Gelbo & cold flexing  
ASTM D 2097, ASTM F 392, ISO 4675
- Colorfastness testing

### ■ GLOVES

- Glove function (dexterity, tactility, grip)  
ANSI - ISEA 105

- Performance of protective gloves for use by law enforcement, corrections and military personnel  
NIJ 99-114
- Protective gloves against mechanical risks  
EN 388
- Protective gloves against cold  
EN 511
- Cut resistance  
ASTM F2992, EN 388
- Needle puncture  
ASTM 2878
- Abrasion  
ASTM D3389, D3884
- Holes in medical gloves  
ASTM D5151
- Protection against heat  
ISO 17493
- Damage by flexing  
ISO 7854
- Low temperature bend test  
ISO 4675
- Dexterity  
EN 420, ASTM F2010