

## TECHNICAL SERVICES DOCUMENT

### Shelf Life and Storage Considerations For Kappler® Protective Garments (Revision 11/2025)

#### **What is Shelf Life?**

Shelf life, also referred to as storage life, can be defined as the time period for which an unused but properly stored and maintained product is expected to retain its desired quality and performance characteristics. It indicates the period during which a product remains effective, useful, or safe, and is typically quoted for products or materials which contain components that are expected to degrade and/or lose their performance effectiveness over time. Factors such as temperature, humidity, and ultraviolet light exposure greatly impact shelf/storage life, and therefore adherence to recommended storage conditions are critical to preserve the effectiveness of your Kappler garments.

#### **How is Shelf Life Determined?**

Kappler® performs shelf life determinations on garment fabrics, seams, and other components to support market claims and meet the requirements of NFPA 1990-2022 *Standard for Protective Ensembles for Hazardous Materials and CBRN Operations*. The samples selected for testing are typically a combination of those subjected to natural aging and accelerated aging. A limited number of chemicals are then evaluated. NFPA 1990-2022, Annex A, Explanatory Materials, lists the following methods for consideration during storage life testing and are utilized by Kappler to support our studies:

- ASTM F1980-2021: *Standard Guide for Accelerated Aging of Sterile Barrier Systems for Medical Devices*
- DLAR (JP) 4155.37: Department of Defense (DoD) Shelf-Life Material Quality Control Storage Standards

This shelf life position has been warranted by the following:

- To comply with the requirements of NFPA 1990-2022 regarding a shelf life statement for all certified products involving hazmat and CBRN protection.
- To provide a consistent level of stewardship across all product lines, both certified and non-certified styles.
- To provide more empirical recommendations to authorities having jurisdiction (AHJ's) for retirement of products as suggested by NFPA 1891-2022
- To introduce consistency with other competitive products utilized in the marketplace.

#### **Storage Considerations**

Proper storage conditions for Kappler garments are as follows:

- Garments must be stored away from direct sunlight or UV exposure.
- Garments must be stored in a cool (between 40° and 90° F), dry, well-ventilated location that is not subjected to extreme hot or cold conditions.
- Garments must be stored dry to prohibit the formation of condensation, in their original boxes, in bags, or on hangers. Garments must be stored with the closures in the open position.

Failure to store garments in the proper environment as described above can adversely affect the protective performance of the garment and may void the Kappler warranty.



**Know What You're Getting Into.**

# TECHNICAL SERVICES DOCUMENT

## **Shelf life of Kappler® Fabrics and Garments**

Under these proper storage conditions, there is no evidence to indicate the Kappler® film composite fabrics lose their protective characteristics or physical properties over time. However, after careful consideration and review of available test data on current fabrics and garments, Kappler has decided to establish a more conservative position on shelf life claims in regard to the standards and tests referenced above.

The shelf life of Kappler fabrics and garments from date of manufacture are as follows:

Chemtape®	10 years
Zytron®	10 years
Frontline®	10 years
Durachem® 500	10 years
Durachem® 200	5 years
ProVent®	10 years
ProVent® Plus	10 years

This shelf life position applies to all garments both certified and non-certified beginning January 24, 2023. Any fabrics or garments manufactured prior to this date will maintain the previous shelf lives.

### **Warning**

The information contained herein is based on technical data that Kappler believes to be reliable. It is subject to revision as additional knowledge and experience are gained. Please visit our website at [www.Kappler.com](http://www.Kappler.com) ("Kappler Website") for the most up to date product information and specifications. All pamphlets, brochures or other literature or printed material may contain information that is not as current as the information on Kappler's website. Additionally, there are uses, environments and chemicals for which Kappler products, garments and/or fabrics are unsuitable. The user has the responsibility to review all available data and verify the product, garment and/or fabric is appropriate for the intended use and meets all specified government and/or industry standards for such use. The user should review all available information on the Kappler Website, product labels and QR codes to understand the appropriate uses and limitations of Kappler products, garments and fabrics.

**CAUTION: Do not use for fire protection. Avoid open flame or intense heat.**

Kappler Inc, • Technical Services Department • Post Office Box 490 (Shipping: 55 Grimes Dr.) Guntersville, AL 35976 • Toll Free 1-800-600-4019 • 1-256-505-4005 • Fax 1-256-505-4151  
• Email: [customerservice@kappler.com](mailto:customerservice@kappler.com)