

## Saunders<sup>®</sup> BioPharm Diaphragms Storage and Shelf Life

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The physical properties and, therefore, the performance of rubber articles can deteriorate during long periods of storage.

This can lead to the rubber component becoming unsuitable for service because of excessive hardening, softening, cracking, crazing or other surface degradation.

These changes may be the result of one factor or a combination of factors; for example, the action of oxygen, ozone, light, heat and humidity.



# Saunders® BioPharm Diaphragms

## Storage and Shelf Life

### Temperature

Storage temperature should be below 25°C (77°F). At higher temperatures certain forms of deterioration may occur to affect the ultimate service life.

The effects of low temperature are not permanently damaging but articles may become stiffer so care should be taken to avoid distortion.

### Humidity

Storage conditions should be such that condensation does not occur, store in a dry environment.

### Light

Vulcanized rubber should be protected from light, in particular direct sunlight and strong artificial light with high ultra-violet content. Unless diaphragms are packed in opaque containers it is advisable to cover windows of storage rooms with an orange screen.

### Oxygen and Ozone

Where possible, cured or vulcanized rubber should be protected from circulating air by wrapping or storing in air-tight containers. This particularly applies to product with large surface areas. Ozone is very aggressive to rubber and storage rooms should not contain any equipment capable of generating ozone such as mercury lamps, electric motors, or other equipment that produces electrical spark or discharge.

### Deformation

Vulcanized rubber, where possible, should be stored in a relaxed condition – free from tension, compression or other deformation.

### Contact with Liquid or Semi-Solid Materials

Rubber should not be allowed to come into contact with liquid or semi-solid materials, in particular solvent oils and greases, at any time during storage.

### Contact with Metals

Certain metals, in particular copper, manganese, and iron are known to have a damaging effect on rubber. Protection should be given by wrapping or separation with paper or polythene or using Spares Packed diaphragms.

### Rotation of Stocks

Vulcanized or cured rubber should remain in storage for the least amount of time possible. Therefore, articles should be issued from storage in strict rotation.

### Cleaning

Care must be taken in cleaning vulcanized rubber. Cleaning with soap and water is least harmful. Organic solvents such as trichloroethylene, carbon tetrachloride, or petroleum spirit, must not be used.

## Shelf Life of Rubber (Elastomeric) Diaphragms

The shelf life of any article such as a diaphragm is dependent on many factors relating to the storage condition. As a guide, the expected minimum storage life, if the conditions are followed and there are no extremes, are as follows:

### Minimum Expected Life 7 Years

Elastomer Diaphragms

- Grade 300 Isobutylene Isoprene

PTFE Diaphragms

- Grade 214/300 (PTFE Butyl)

### Minimum Expected Life 10 Years

Elastomer Diaphragms

- Grade 425 Peroxide Cured EPM
- Grade E3 Peroxide Cured EPM, Post Cured
- Grade EE Peroxide Cured EPDM
- Grade EF Peroxide Cured EPDM, Post Cured
- Grade 500 Dicumyl Cured Silicone
- Grade PV Passivation Diaphragm Peroxide Cured EPM Special P Style Attachment Passivation Duty Only

PTFE Diaphragms

- Grade 214S/425 Modified PTFE Face Peroxide Cure EPM Backing
- Grade 214S/EE Modified PTFE Face Peroxide Cure EPDM Backing
- Grade 214/425 PTFE Face Peroxide Cure EPM Backing
- Grade 214/EE PTFE Face Peroxide Cure EPDM Backing
- Grade EX Endurance Diaphragm Modified PTFE Face Dicumyl Cured Silicone Backing

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