

# Gel Seal

## Filter To Frame Sealant



### Description

Gel-Seal is a unique, ice-blue silicone gel specifically designed to create and preserve an airtight seal between high-efficiency particulate air filters and their holding frames or housings.

The gel is factory-installed and factory-cured in the perimeter channels of filters designed for fluid seal applications. The cured gel has the self-healing qualities of a liquid while retaining the stability and non-flow characteristics of a solid. These properties are maintained at both high and low temperature extremes and are not lost even when aged continuously at high temperatures.

Gel-Seal exhibits excellent bonding characteristics to many materials, it is also highly self-adhesive, allowing knife edges and filter skirts to be cleanly withdrawn. The hydrophobic nature of the gel makes it ideally suited for applications that require long-term sealing against moisture and other atmospheric contaminants.



## Temperature Range

The recommended constant operating temperature range for Gel-Seal is -56°C to +200°C. Short terms (1-2 hours) at higher temperatures should be limited to 260°C.

Exposure to either extreme will not alter the properties of the gel when returned to ambient temperature.

Temperature below -56°C will increase hardness; the gel will become brittle at -67°C and will be prone to cracking if subjected to mechanical shock. Continuous exposure to temperatures above +200°C will result in degradation of the polymer.

## Exposure To Flame

A flame exposure test evaluating Gel-Seal's flammability characteristics was performed, following the same procedure used in the Underwriters UL 94-VO test. The test turned to ash on the outer surface, but the inner core remained normal. The gel maintained its physical shape and did not run or melt. Based on the testing, it is concluded that Gel-Seal is a self-extinguishing material that will perform its designed function as a filter-to-housing sealant until flame impingement totally turns the sealant to ash.

## Fire And Explosion Data

Flash point: Determined by Cleveland ADTM D92 Open Cup Method, Result: No flash at 232°C.

## Volatility

The non-volatile content of Gel-Seal, as determined by testing 2 grams for 2 hours at 150°C is 98%. The volatility rate of the gel, measured after it has been cured at the factory and is ready for shipment is 0.2%.

## Penetration

The effect of temperature on the hardness of Gel-Seal has been tested using a Brookfield LVT No.3 test machine. The following results are expressed in points of penetration (mm x 10<sup>-1</sup>) as measured by the machine. @ -50°C: 35 @ +25°C: 57 @ +200°C: 34

## Radiation Effects

The expected radiation resistance of Gel-Seal is 20 mega rads at room temperature, 10 mega rads at +150°C, and 5 mega rads at +200°C. Radiation exposure at these levels will not effect the sealing properties of the compound. Exposure to higher levels of radiation and temperature will result in brittleness, which is not reversible.

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