



Chloramine-Resistant Sealing Materials

Bulletin No. PSG 5027



The Problem:

The change from free chlorine to chloramine as a primary means of disinfecting potable water is causing NSF-certified seal materials to degrade, spawning performance issues and warranty claims for water handling equipment manufacturers.

A comprehensive study by Parker documents the premature degradation and failure of NSF-certified elastomeric materials when exposed to chloramine-treated water.

THE RESEARCH.

The standard ASTM D6284 test for rubber properties was conducted on NSF-certified elastomeric compounds, including existing Parker formulations, new Parker chloramine-resistant formulations, and competitor formulations. A variety of samples were placed in water, containing chloramine as 50 ppm total residual chlorine. The water was kept at a constant temperature of 70°C and was refreshed per the ASTM standard.

THE RESULTS.

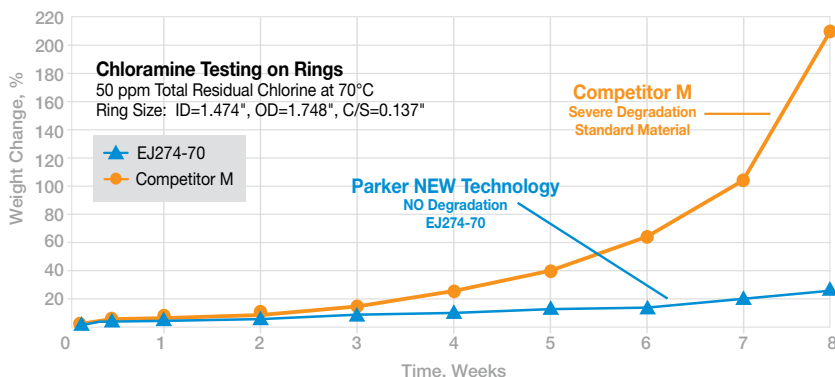
Parker's new chloramine-resistant formulations show no sign of degradation and minimal swell after eight weeks of constant exposure to the chloramine solution. Other tested materials show severe degradation and swelling with the same exposure.

THE TAKEAWAY.

Parker's new chloramine-resistant materials, both standard and lubricated, offer improved resistance to chloramine degradation and swelling over time. Based on the test results, Parker's chloramine-resistant materials will provide significantly longer useful seal life compared to all other tested materials. This can reduce potential warranty claims, when used as seals in plumbing fixtures and potable water handling equipment.

The new Parker chloramine-resistant materials are tested and certified by NSF International for potable water applications and are available in both standard and custom shapes.

ASTM D6284 Chloramine Testing



To learn more about Parker's new chloramine-resistant seal materials, call 1-800-C-PARKER.

CHLORAMINE ATTACKS ELASTOMERIC SEALS IN MANY WAYS.



DEGRADATION

Seal degradation can result in a loss of sealing properties. After eight weeks of chloramine exposure, Parker's chloramine-resistant material (left) shows no sign of degradation, as opposed to the competitive material.



DISINTEGRATION

In this instance, chloramine exposure has caused the rubber to disintegrate in the form of debris in the water system.



SWELLING

Severe swelling of as much as 350% can result in overfilling of the sealing glands. This creates excess stress and strain on the elastomer, thereby reducing sealing performance.



The Solution:

Research shows Parker's
new chloramine-resistant
materials can significantly
increase seal life while
reducing warranty issues
for our customers.

Other Parker NSF-Certified Materials

Parker also offers a wealth of other NSF-certified materials for applications in plumbing fixtures and potable water handling equipment. They include the following:



Parker Compounds for Plumbing**

Parker Compound	Polymer	Hardness	Service	Approval
EJ274-70*	EPDM	70	Commercial Hot, Internally Lubed, Chloramine Resistant	NSF61
E1549-70	EPDM	70	Commercial Hot	NSF61, WRAS, KTW, ACS
E1561-60	EPDM	60	Commercial Hot	NSF61, WRAS, KTW
E1583-70	EPDM	70	Commercial Hot, Internally Lubed	NSF61
E1244-70	EPDM	70	Commercial Hot, Internally Lubed	NSF61
E8790-70	EPDM	70	Commercial Hot, Press-Fit Fittings	NSF61, WRAS, KTW, ACS, KIWA, W270, EN681-1, W534
EJ151-80	EPDM	80	Commercial Hot	NSF61
N0757-70	NBR	70	Cold Water	NSF61
N1510-70	NBR	70	Commercial Hot	NSF61

* Non-internally lubed version EJ273-70 available pending NSF certification

** Other materials available for specific applications

International Certifications:

WRAS - United Kingdom

KTW - Germany

W270 - Germany (microbiological growth)

W534 - Germany (pipe fittings)

ACS - France

KIWA - Netherlands

EN681-1 - Europe (pipe fittings)

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