Chemraz® 541: Superior Resistance to Aggressive Amines Used in Chemical Processing Industries

Our recent study on Chemraz® 541 explored its chemical compatibility with key amines like DEA, MDEA, and MEA used in chemical processing industries. These tests were conducted under rigorous conditions, including temperatures of 150°C (302°F), to evaluate the material's durability and performance. Volume change is a key indicator of an elastomer's chemical resistance; a change of 10% or less in harsh fluids such as amines indicates the material will be less susceptible to chemical attack, mitigating the risk of premature seal failure. Based on the test results, Chemraz® 541 offers significant advantages for chemical processes to enhance performance and reduce downtime.

Test Conditions

Testing was conducted at a third-party accredited laboratory under the following conditions:

- **Test Methods:** Based on ISO 1817:2015; Using test techniques from ISO 23936-2:2011 Annex A Fluid Immersion
- **Soak Temperatures:** 150°C (302°F) ±3°C (±5°F)
- **Soak Durations:** 168 and 336 hours ± 2 hours soak
- **Liquids:** DEA, MEA, and MDEA
- **Soak Pressure Vapor:** Pressure of the liquid

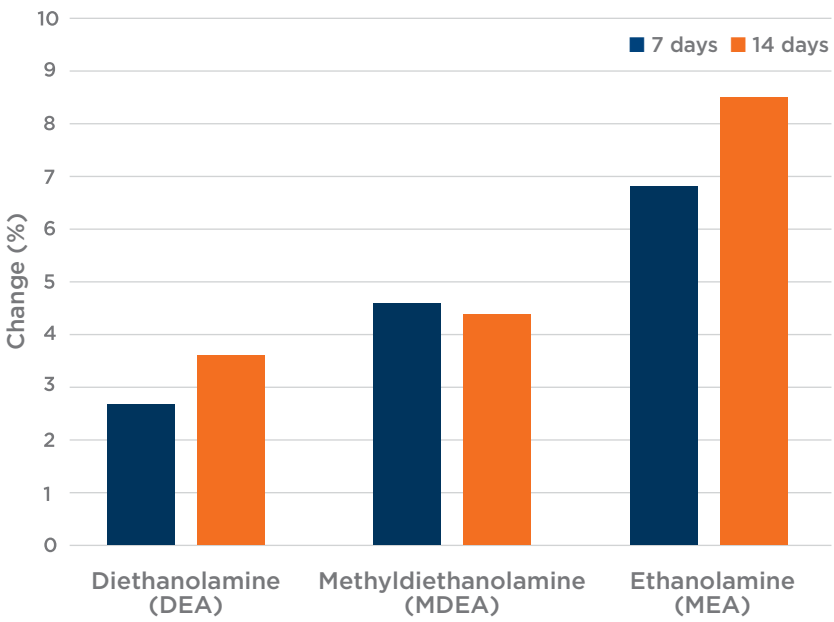
Results

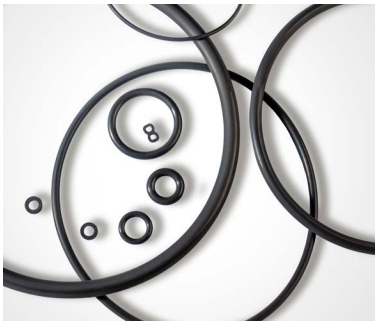
- Chemraz® 541 showed **excellent chemical resistance** at 150˚C (302˚F)
- Volume change for Chemraz® 541 measured at **below 10%** at both 7-day and 14-day intervals

Conclusion

Based on these results, the superior chemical resistance of Chemraz® 541 makes it an ideal option for use within aggressive chemical processes, extending downtime and improving reliability.

Volume Change at 150°C (302°F) for 7 & 14 Days





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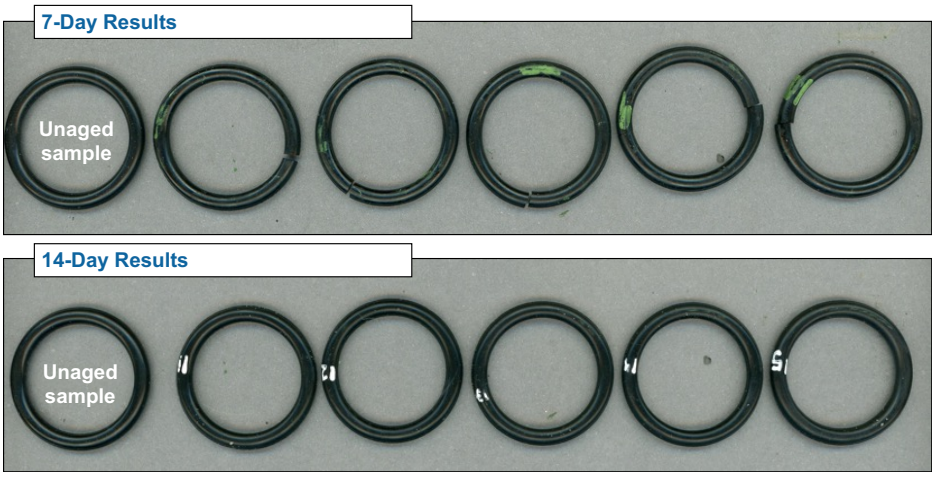
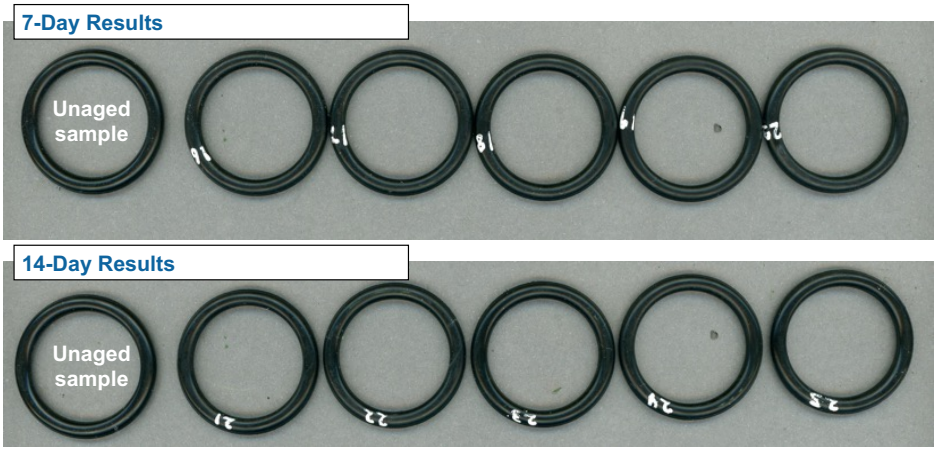
7-Day & 14-Day Amine Visual Results: Diethanolamine (DEA)



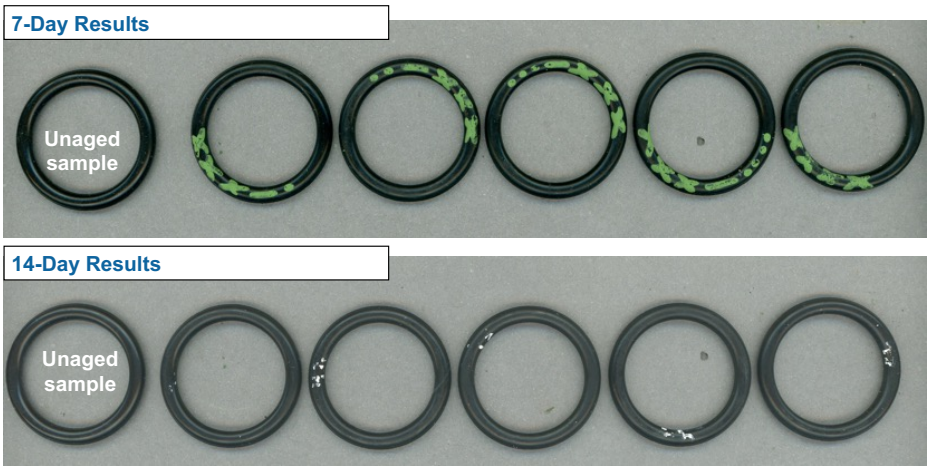
Chemraz® 541 showed no visual damage at the 7-day and 14-day soak in DEA at 150°C

7-Day & 14-Day Amine Visual Results: Methyldiethanolamine (MDEA)



Chemraz® 541 showed no visual damage at the 7-day and 14-day soak in MDEA at 150°C

7-Day & 14-Day Amine Visual Results: Ethanolamine (MEA)



Chemraz® 541 showed no visual damage at the 7-day and 14-day soak in MEA at 150°C

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