Ionic Hybrid

Elastomers™

DiaCom has developed elastomer formulations using Ionic Hybrid Technology in combination with additional compound refinements and enhancements to offer improved flex life.

This technology can be utilized in any Diaphragm design and geometry, which include with or without fabric reinforcement, bonded inserts and barrier films. Ionic hybrid cure technology can also be combined with DiaCom's Fab-Air dispersed fiber.

Elastomers using this technology do not need any special molding equipment. It is used exclusively in elastomer compounds. Ionic Hybrid Technology can be used in a variety of elastomers, such as HNBR, EPDM, FKMs and FEPMs all to provide enhanced properties.

How it works:

A chain of paper clips can be made by linking them together, See **Figure A**. However, we can break the chain by sliding them apart. In Elastomers, after repeated flexing cycles, chemically & heat resistant cross-links will irreversibly break, See **Figure B**. With paperclips, we can reverse this process by sliding the paper clips back together to reform the chain. The Ionic hybrid materials allow for the cross-links to reform and thus maintain rubber integrity during flexing. This reforming of cross-links extends the life of an elastomer measurably.

Figure A

Figure B

Ionic Hybrid technology vs. Conventional elastomer compounds:

- Enhances performance
- Improves Flex Life
- Improves Mechanical properties such as Tear Strength
- Improves Abrasion Resistance
- Improves Adhesion to a substrate
- RoHS and REACH compliant.

Diacom's new Ionic Hybrid Technology has been approved in current applications that require homogeneous and fabric reinforced molded diaphragms to operate at a wide range of temperatures and pressures. By utilizing this technology over standard rubber compounding technology, we were able to dramatically increase the cycle life of diaphragms in many applications. The Ionic Hybrid Technology enables Diacom to manufacture molded diaphragm seals that consistently meet or exceeds the ever more demanding applications that customers require.

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