



Chemical Resistance of Cured Urethane Sealants

Solvents

Cured urethane sealants are resistant to occasional splash and spillage contact with typical solvents, and they can tolerate room-temperature immersion in ethyl alcohol and water-glycol mixtures. However, long-term immersion to most typical solvents such as those listed below will cause softening and swelling.

- Acetone
- Benzene
- Diesel fuel and gasoline
- Ester solvents
- Methyl alcohol
- Methylene ketone (MEK)
- Methylene chloride
- Mineral spirits; lacquer and paint thinner
- Toluene and xylene.

Alkaline (caustic) materials

Cured urethane sealants can tolerate splash and spillage contact with strongly alkaline (caustic) materials but are severely degraded by long-term immersion and by contact with hot caustics. Concentrations as dilute as 10% can cause serious deterioration. Caustic concentrations below 10% can still cause degradation but only upon longer contact. Typical caustics are:

- Caustic soda
- Caustic potash
- Sodium, potassium, calcium and ammonium hydroxides
- Trisodium phosphate solution
- Sodium carbonate solution.

Acids

Cured urethane sealants are resistant to both organic acids and strong inorganic acids in dilute to medium concentrations (25 to 50%) for both occasional and longer term contact; however, acids will cause urethane breakdown if hot or concentrated.

Typical organic acids are:

- Acetic
- Butyric
- Citric
- Lactic
- Oxalic.

Typical inorganic acids are:

- Hydrochloric (muriatic)
- Hydrobromic
- Phosphoric
- Sulfuric.

Miscellaneous

Cured urethane sealants can tolerate long-term total contact with dilute chlorine (5 ppm) but are degraded by chlorine levels of 100 ppm or above. Sealants will not withstand either total immersion or hot contact with oxidizing materials, such as:

- Chromic acid (>5%)
- Liquid oxygen
- Nitric acid (>75%)
- Perchloric acid (>75%).

Most other materials, such as lubricating oil, sodium chloride and salt solutions, have little effect.

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