

Chemical Resistance of K-Flex Elastomeric Insulation

K-Flex USA manufactures flexible, closed cell elastomeric insulation materials in both preformed pipe and sheet/roll forms. Flexible, closed cell insulation materials are an ideal choice for use on cold piping systems and anywhere there is a possibility of water or moisture due to weather, humidity or condensation.

Elastomeric insulation products exhibit excellent chemical resistance to a wide range of chemicals. Elastomeric insulation materials can be based on a variety of elastomers. K-Flex USA's primary products are based on NBR (Acrylonitrile Butadiene Rubber). In some cases, PVC (polyvinyl chloride) or other plastic additives are incorporated. K-Flex HT is an EPDM (ethylene propylene diene monomer) based insulation. The chemical resistance of the product will be based on the primary polymer the product is based on.

Chemical resistance depends on several parameters – length of exposure, concentration of chemical, and temperature of application. In cases where the base material does not provide sufficient chemical resistance, a coating, jacket or cladding can be applied.

An excellent source for chemical resistance information is the Cole-Parmer website: www.coleparmer.com/techinfo/chemcomp.asp. On this website, under “material”, select EPDM for K-Flex HT or Buna-n for Insul-Tube / Sheet and K-Flex ECO elastomeric insulation. Under “Chemical”, select all or pick out a specific chemical from the list and click the “submit” button. This site uses a compatibility grading system from A to D. Ratings are based on a 48 hour exposure at 72°F and 120°F. The grading system is:

A = Excellent

B = Good. Minor effect.

C = Fair. Moderate effect: Not recommended for continuous use. Softening, loss of strength or swelling may occur.

D = Severe effect. Not recommended for any use.

The site can also provide chemical compatibility information for aluminum, hypalon, PVC and stainless steel which are often used as jacketing materials. Select any of these options under the “materials” menu.

Additional sites with this information are:

<http://www.customadvanced.com/chemical-resistance-chart.html>

http://www.vp-scientific.com/Chemical_Resistance_Chart.htm

As stated above, length of exposure, concentration of chemical, and temperature play a major role in determining if the insulation can be used in the application. If possible, it is recommended that the insulation be exposed to the actual environment/conditions in which it will be used to determine acceptability.