

## VOC CONTENT IN K-FLEX INSULATION PRODUCTS

Volatile organic compounds (VOCs) are hydrocarbon compounds emitted from certain solids or liquids in the form of a gas as a result of their low boiling points. VOCs include a variety of chemicals which occur naturally in the environment or as the result of man-made activities and products. Some VOCs may cause short or long term adverse health effects.

Government agencies such as the Environmental Protection Agency (EPA) have classified / labeled certain chemicals as harmful VOCs and regulate their concentrations (limit values) in the air, land and water. They have developed a methodology to measure them in the air and have determined acceptable exposure limits. Other government agencies such as the California Resource Board (South Coast Air Quality Management District – SCAQMD – Regulation 1168) have established limits for VOCs in products. As of January 1, 2014 the limit is 50 grams VOC per liter for adhesives and coatings. Many code jurisdictions have adopted SCAQMD Regulation 1168 requirements. VOCs in the indoor environment are of particular concern because of the extended exposure time and elevated concentrations that can be encountered. VOCs on the regulated list must be identified on the product's Safety Data Sheet (SDS). They are also listed on the product's label.

In addition to government agency regulations, the building industry through the US Green Building Council has instituted the LEED (Leadership in Energy and Environmental Design) initiative which includes mandates / limits on the VOCs of the products used in the building envelope.

Regulated VOCs are emitted by a wide variety of commonly used man made products such as paints, coatings, cleaning supplies, adhesives and building materials. Regulated VOCs that could typically be found in these products would be; toluene, methylene chloride, benzene or formaldehyde to name a few.

K-Flex USA offers a wide variety of products for the insulation market. The regulated VOCs found in these products are listed on the SDS. K-Flex Insul-Tube / Insul-Sheet, K-Flex Duct Liner Gray, K-Flex Clad WT, K-Flex PE and K-Fit Fittings made from these materials are UL GREENGUARD GOLD classified as low VOC materials suitable for LEED projects and jurisdictions requiring low VOC materials.

**All K-Flex NBR/PVC based flexible closed cell elastomeric and polyethylene insulation products are classified as having low VOCs.**

The VOC content is monitored by third party testing through the UL Environment GREENGUARD program. They are classified as GREENGUARD GOLD, having a VOC limit of less than 0.22 mg/m<sup>3</sup>. This classification would include all K-Flex NBR/PVC based brands and insulation configurations including with PSA (pressure sensitive adhesives) and CLAD WT jacketing.

**These products would comply with the requirements of the LEED program.** (See Technical Bulletin TA40).

K-Flex adhesives are offered in several types; solvent based contact adhesives, pressure sensitive adhesives (PSA) and water based contact adhesives.

**The PSAs and water based contact adhesives would be in the low VOC category and would comply with the LEED program requirements.**



K-Flex's solvent based contact adhesives 320, 373, 420 and 620 are not low VOC products and would not comply with the requirements of SCAQMD Regulation 1168 or the LEED program.

**K-Flex 720 LVOC contact adhesive is also solvent based, but it complies with the classification / definition of a low VOC product since it contains 0 grams / liter of regulated VOCs.** It is an acetone based adhesive.

K-Flex 1120 Water Based contact adhesive is also a low VOC product (VOC 0 = g/l) and meets regulatory and LEED program requirements. K-Flex 1120 adhesive may not be suitable for all applications.

**K-Flex 374 (water based) Protective Coating would be considered a low VOC product (VOC less than 7g/L) and would comply with the requirements of the LEED program.**

K-Flex USA strives to make environmentally friendly products that are extremely safe to use. SDS are available for all K-Flex products and can be found on our web site; [www.KFlexUSA.com](http://www.KFlexUSA.com)  
Any questions concerning K-Flex products should be sent to our corporate office in Youngsville, NC.