# EN-	007-0243
NAME:	Engineering
REV:	NC

Engineering Note

SUBJECT: **CICOIL HALOGEN FREE CABLES**

Halogens include the five non-metallic elements Astatine (At), Bromine (Br), Chlorine (Cl), Fluorine (F) and Iodine (I), which form Group 7 in the Periodic Table of Elements. The term Halogen means "salt producing" or "salt forming". When any of these 5 elements are combined with metals, they produce binary "salts", such as calcium fluoride, sodium chloride (table salt), silver bromide and potassium iodide.

Typically, electrical cables manufactured with PVC, Neoprene, Chlorinated Polyethylene (CPE), FEP and PTFE Teflon, require the addition of halogens to make them flame retardant and to withstand high temperatures. However, when cables containing halogens are burned, toxic fumes and acidic gases (when bonded with hydrogen) are produced, which sear the eyes, nose, mouth and throat to cause severe respiratory damage, disorientation and even death.

Electrical and electronic cable products are considered Halogen-free if they are manufactured without the use of these elements, in the raw materials or the finished cable products. Cables manufactured with silicone rubber materials are halogen-free and by nature are flame retardant, and they do not contain any of the toxic elements: astatine, bromine, iodine, fluorine or chlorine.

Constructed with its proprietary Flexx-Sil™ jacketing material, Cicoil's high performance flat cables are Halogen Free & Flame Retardant (HFFR). The ultra-pure material combines the best aspects of silicone rubber, such as flexibility, durability and extreme temperature exposure, but without any contaminating substances.

Due to its unique mixture of materials, Flexx-Sil™ does not ignite easily, and if ignited, will not produce black smoke or toxic gas during combustion. The crystal-clear, non-corrosive jacket does not contain color additives, plasticizers, CFC's or halogens, which are typically found in other cable jacketing materials.

Cicoil's Halogen-Free (per IEC/DIN IEC 60754-1) and Flame Retardant (per IEC 60332-1), Flexx-Sil™ jacketing material has a temperature rating of -65°C to +260°C and passes UL 94V-0, UL/CSA VW-1, FT 1 & FT 2 flammability testing and FAA burn testing.

Please contact CICOIL for more information. techsupport@cicoil.com Or on the web at: cicoil.com