

## Compliance of Arlon Silicone Flexible Heater Compounds to the Directive 2002/95/EC on RoHS

Arlon's silicone rubber compounds used to manufacture flexible heater substrate materials comply with the requirements of Directive 2002/95/EC on the Restriction of Hazardous Substances (RoHS). Directive 2002/95/EC on RoHS is a recent directive that serves to protect the health of persons and the environment by reducing the quantity of several hazardous substances in electrical and electronic equipment. The Directive was adopted by the European Parliament and the Council of 27 January 2003. The directive becomes effective on 01 July 2006 at which time all electrical and electronic equipment distributed in the European Community must comply. The hazardous substances and their maximum permitted level are listed in Table 1.

Hazardous Substance	Permitted Maximum Level	
	PPM	%wt
Lead	1000	0.1
Mercury	1000	0.1
Cadmium	100	0.01
Chromium, Hexavalent	1000	0.1
PBB (polybrominated biphenyls)	1000	0.1
PBDE (polybrominated diphenyl ethers)	1000	0.1

*Table 1*

Arlon ensures that its silicone rubber compounds used for flexible heater materials comply with the RoHS Directive by eliminating the use of the hazardous substances as raw materials. Arlon does not intentionally use the six hazardous substances listed in Table 1 as raw materials to manufacture its silicone rubber compounds. Additionally, Arlon uses independent laboratory analysis to certify that naturally occurring hazardous substances (in Table 1) in raw materials do not exist above RoHS Directive permitted levels. Finally, Arlon offers several RoHS Directive compliant silicone rubber compounds that can be utilized in our calendered, silicone, flexible heater substrates.

Raw material data provided by our vendors has been thoroughly examined for compliance to the RoHS Directive. Arlon is an ISO 9001 certified manufacturing facility so incoming raw materials are monitored by our quality assurance group through vendor certification. Any manufacturing or formulation change to raw materials requires immediate notification by our vendors per the ISO 9001 standard to ensure RoHS Directive compliant materials are received.

Arlon has contracted the Process Chemistry Laboratory of Intertek Caleb-Brett to test our silicone rubber compounds for compliance to the RoHS Directive. Intertek Caleb-Brett offers laboratory testing, laboratory outsourcing, cargo inspection, and certification services at 370 offices and 217 laboratories in over 118 nations. The Process Chemistry Laboratory is an ISO-1705 accredited facility located in Louisiana, USA. Intertek's Process Chemistry Laboratory utilizes X-Ray Fluorescence Spectroscopy (XRF) as a tool to determine the quantity of lead, mercury, chromium, cadmium and bromine present in materials. XRF can detect levels of naturally occurring hazardous substances and has

determined that Arlon's flexible heater compounds are in compliance with the RoHS Directive. Arlon flexible heater compounds that are certified for RoHS Directive compliance are listed in Table 2.

Compound Number	Compound / Color Code*	Compliance to Directive 2002/95/EC on RoHS
310CR	58 / R	YES
410CR	57 / R	YES
414CR	14 / R	YES
427CR	27 / R	YES
<i>Table 2</i>		

Arlon's flexible heater substrate part numbers are of the form (GG)(##)(C)(CO)(TTT). The second part of the number, designated by (##), is a two digit code that identifies the silicone rubber compound used to produce that flexible heater product. The fourth part, designated by (CO), is a one or two letter code that identifies the color of the silicone rubber compound used to produce that flexible heater product. The Directive compliant compounds listed in Table 2 can be utilized as in the 51276R015 part number example below.

**[Example: 51276R015]** Flexible heater substrate part number (GG)(##)(C)(CO)(TTT)

- (GG) Two digit code identifying the substrate [51] = Style 7628 fiberglass
- (##) Two digit code identifying the silicone rubber compound [27] = 427CR compound
- (C) One digit code identifying the product construction [6] = Cured Side 1 and Uncured Side 2
- (CO) One or two letter(s) identifying the product color [R] = Red
- (TTT) Three digit code identifying the overall product thickness in mils [015] = 0.015"

The silicone rubber compounds listed in Table 2 are in compliance with Directive 2002/95/EC on RoHS. Their compliance to the RoHS Directive was determined through a review of vendor supplied data on raw materials and testing via XRF conducted at an independent laboratory. The absence of an Arlon silicone rubber compound from Table 2 does not indicate that it is not in compliance with the RoHS Directive but rather that evaluation for compliance has not yet been completed. Questions or concerns regarding the compliance of Arlon silicone rubber compounds should be directed to Arlon Customer Service at 1-800-635-9333.



## Silicone Technologies Division

1100 Governor Lea Road, Bear, DE 19701  
 Phone: (302) 834-2100, (800) 635-9333 Fax: (302) 834-4021  
[www.Arlon-STD.com](http://www.Arlon-STD.com)

*The information and data contained herein are believed reliable, but all recommendations or suggestions are made without guarantee. It is the responsibility of the end user to thoroughly and independently test materials for any planned application and determine satisfactory performance before commercialization. Furthermore, no suggestions for use, or material supplied, shall be construed as a recommendation or inducement to violate any law or infringe on any patent.*