Skin Sensitization of Rosin and Its Derivatives
By Nelson E. Lawson

In the 1990's numerous papers by Prof. A. T. Karlberg at a Swedish university purported to show that rosin and some of its derivatives were skin sensitizers, i.e., after an initial exposure to the substance, repeated exposure led to skin reddening, rashes, and breakdown. On that basis, the European Commission (EC) classified rosin as "R43" – a skin sensitizer.

Extensive testing by companies in the Hydrocarbon and Rosin Resin Producers Association (HARRPA) in Europe showed that the test substance used by Prof. Karlberg was not rosin but largely oxidized rosin and that rosin itself was not a skin sensitizer by any of the three tests commonly used. Moreover, naturally oxidized rosin was only a mild sensitizer by one of the three tests.

In 1999, HARRPA brought their test results to a European Commission Working Group (WG) of experts. The WG accepted that HARRPA was scientifically correct, but decided that:

"The Group agreed to maintain the current Annex I entry of ‘rosin’ unchanged with the classification R43, as declassification, although scientifically justified, would decrease the level of protection within the present regulatory system and the available means of control."

Seeing no alternative, three HARRPA companies sued the EC in the European Court of Justice in 2003. The Court rejected the suit in 2005, and the subsequent appeal based on several technicalities, never addressing the real issue of classifying a substance (rosin) based on the properties of a different substance derived from it (oxidized rosin).

HARRPA made no further attempts to declassify rosin and as a result, it is classified as a skin sensitizer in Europe and in a few other countries. In turn, this has led some customers to restrict the use or sale of rosin or its derivatives, including in cases where there is scant – if any – evidence that the specific rosin derivative is a skin sensitizer.

It is necessary to carefully distinguish among the various rosin products when considering human health effects in the various end-uses. Therefore, to offer a more detailed and objective background on skin sensitizers, the PCA supported the development of a monograph that analyzes existing scientific studies and research data on rosin and its derivatives.

To help ensure that skin sensitization does not become a criterion in determining if a chemical is a Substance of Very High Concern, the PCA had Dr. Paul Illing a noted consulting toxicologist with expertise in skin sensitization, and Dr. Leon Rodenburg, formerly of Eastman Chemical who was closely associated with the issue from the beginning, develop a comprehensive monograph on the topic.

The monograph supports our organizations' position on the issue and will be a valuable tool in substantiating our perspective. The monograph is available to members of the PCA and HARRPA for transmittal to regulators, customers and the public.

The PCA also sponsored Dr. Illing's presentation of a paper on the skin sensitization of rosin at the 7th Occupational and Environmental Exposure of Skin to Chemicals conference.