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The National Candle Association Response to South Carolina State University Researchers' Claims on Candles

WASHINGTON, DC, March 2017 --- The National Candle Association challenges the scientific validity of a report by two South Carolina State University researchers*, which links certain candles to hazardous chemical burn emissions. The safety of scented candles is backed by decades of research, testing, and a history of safe use. Consumers can be confident that a well-made and properly burned candle will burn cleanly and safely, despite unfounded concerns.

The assertions of Drs. Massoudi and Hamidi contradict the overwhelming body of scientific evidence on the topic. No scientific study has ever shown any candle wax, including paraffin, to be harmful to human health. In fact, paraffin is approved by the U.S. Food and Drug Administration for use in food, cosmetics, and medical applications. In addition, the researchers' data has not been published or subjected to scientific peer review to evaluate its validity, and several statements made in the release are either unsupported by data in the presentation, or serve as an overstatement of its findings. As the leading technical and scientific authority on the industry, The National Candle Association continues to recognize the importance of correcting the misrepresentation of facts to the public.

First, the university's press release links long-term exposure to emissions of certain types of candles to human health and poor indoor air quality. This overstates the presentation findings, as it contains no data on exposure levels. Indeed, without more information on the testing methodology, such as the chamber volume, burn rate, number of candles in the chamber, and airflow, it is impossible to know if the study used scientifically acceptable methods for estimating consumer exposure, or is even capable of estimating exposure. Second, the press release claims that the alkanes, alkenes and toluene detected in the study cause harmful effects in humans. In addition to there being no supporting documents linking alkanes and alkenes to these effects, the cited study provides weak evidence regarding toluene, as the exposure association is not specific for this chemical. Third, the press release states that inhalation of candles can be linked to the development of health risks such as cancer, common allergies, and asthma. The presentation contains no data supporting this claim, and the four cited studies do not indicate a health risk from candle emissions. Finally, it is noted that an increase in production and demand for soy candles could lead to health risks caused by paraffin candles. The statement implies that paraffin candles pose a health risk, an issue that is not addressed in the presentation.

The candle industry conducts health and safety studies for all materials used in candles, as required by regulators. An authoritative international study in 2007[#] tested candles made from every major wax type and analyzed them for more than 300 chemicals known or suspected of toxicity, health risks or respiratory irritation at elevated concentrations. The study found that all waxes burned cleanly and safely, with no appreciable differences in burning behavior. The combustion byproducts of every candle wax were virtually identical in composition and quantity, with all levels registering far below the most restrictive of any applicable indoor-air standards.

A 2014 study[‡] tested the emissions from scented candles, calculated consumer exposure of specific chemicals in the candle emissions, and concluded that under normal conditions of use, scented candles do not pose known health risks to consumers.

The National Candle Association and its members are dedicated to safety, and we continue to promote the importance of relying on scientifically-supported data. The report by Drs. Massoudi and Hamidi consists of several unsubstantiated claims and misrepresents the available data, raising unnecessary concern regarding candle safety.

** Emission products of petroleum-based candles, Ruhullah Massoudi and Amid Hamidi, South Carolina State University, presentation before American Chemical Society symposium session, 2:15 - 2:35 p.m., Wednesday, Aug 19, 2009; Washington, DC.*

Study summary available at: <http://candles.org/wp-content/uploads/2014/05/2007Okometricstudysummary.pdf>

‡ T. Petry, D. Vitale, F.J. Joachim, B. Smith, L. Cruse, R. Mascarenhas, S. Schneider and M. Singal (2014) Regulatory Toxicology and Pharmacology, vol. 69, pp. 55-70.

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National Candle Association (NCA) is the trade association representing U.S. candle manufacturers and their suppliers. It is widely recognized as the leading technical authority on candle manufacturing, science and safety. Visit www.candles.org.