## E16 A Successful *Daubert* Challenge: Trial Court Upholds the Law of Gravity

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After attending this presentation, attendees will have an understanding of the factors the trial court takes into account when considering a *Daubert* challenge in a fire product liability case. This presentation will provide attendees with the kind of evidence they may see in contested fire cases.

This will be a case study of a product liability lawsuit involving com- peting hypotheses put forward by fire investigators.

The Plaintiff, a ten-year-old boy was playing with fire and burned himself severely. He and his parents alleged that the utility lighter with which he may or may not have been playing with at the time was defec- tively designed because even without the childproof safety device being disengaged, pulling on the activation lever released iso-butane. The design of the lighter was such that the childproofing device prevented a spark from being introduced at the tip of the lighter, but did not prevent iso-butane from being released when the lever was partially depressed. Ambulance personnel and doctors who treated the boy both reported that he had told them he had been "playing with matches." Later, in a deposition testimony he stated that when he said "matches", he meant "a lighter."

Plaintiff's experts opined that the burning was caused by the ignition of fugitive iso-butane released from the lighter, and to prove his case released iso-butane from an exemplar lighter into a 250 ml beaker and ignited it. He further showed that the iso-butane burning in this beaker was capable of igniting cotton similar to the cotton tee shirt worn by the Plaintiff.

The Plaintiff's testimony was that he had held the lighter at his side pointing away from himself and depressed the actuation lever a few times for no more than "a few milliseconds."

Plaintiff's expert chose to disregard this testimony and opined that the youngster had placed the lighter against or under his tee shirt, and held the lever down for a much longer period of time releasing much more iso-butane. He based this opinion on the amount of damage to the tee shirt, and on the parts of the youngster's testimony that comported with his hypothesis, i.e., that he saw a bright flash of yellow flame immediately after igniting the lighter. The expert did nothing to quantify the amount of iso- butane required to cause the hypothesized explosion, nor did he test the behavior of iso-butane. He stated that iso-butane had flammable limits of 1.8% to 8.4%, and the lighter released a flammable mixture, therefore, the gas was only about 2% denser than air, a clever, but completely false analysis. Defense experts, including the author, used a shadowgraph to demonstrate that iso-butane released from a lighter would fall immediately to the floor, because it is twice as heavy as air. The necessary mixing with air occurs only after the fuel is released, a fact lost on the other expert.

A close examination of the tee shirt revealed that at least some of the burning occurred while it was folded on itself, i.e., after the boy had pulled it off. Tests were also conducted showing that it was impossible for a cloud of iso-butane to accumulate absent some confining vessel. A final series of tests was conducted wherein it was assumed that the law of gravity was sus- pended, and a 5% mixture of iso-butane and air was pumped into a plastic dry cleaning bag surrounding a cotton tee shirt. The tee shirt was sur- rounded with this flammable mixture containing the amount of iso-butane that would be released by the lighter if it were held open for fifteen minutes. Not surprisingly, when an ignition source was supplied, an explosion occurred, but the iso-butane burned so quickly that it did not release suffi- cient energy to ignite the cotton shirt.

Testing from both sides was presented to the Court in a motion to exclude the Plaintiff's expert from testifying. The Court ruled, in a detailed 35 page opinion, that Plaintiff's expert, though he claimed to be reliable and following the scientific method, selectively ignored data that did not comport with his theory. The testimony was excluded and the case was dis- missed. The trial court was most critical of Plaintiff's expert's acceptance of certain parts of the Plaintiff's testimony as true, and disregarding other evidence that refuted that testimony. He stated, "in a word, the expert failed to collect all available data prior to making his opinion, and in some instances, selectively disregarded pieces of data to the extent they con- flicted with his hypothesis."

The Court acknowledged the applicability of ASTM and NFPA standards to fire investigation. This ruling exemplifies the use of *Daubert* challenges to prevent juries from being presented with junk science and speculation.

**Fire Testing, *Daubert*, Product Liability**

 ** Presenting Author*