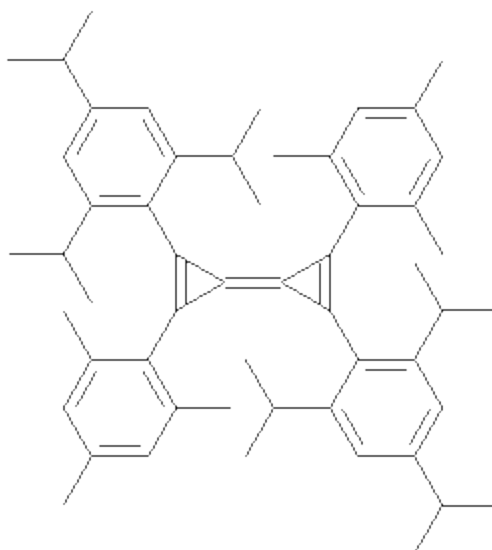


# TRIAFULVALENE

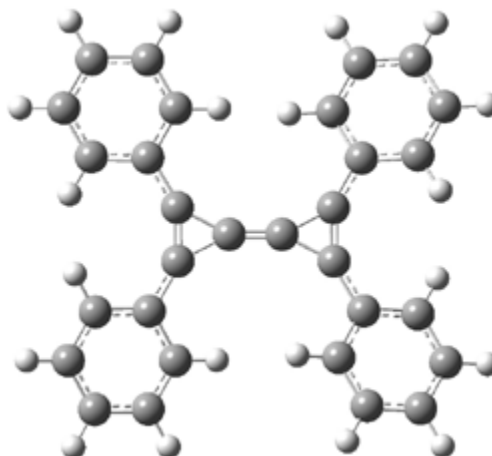
Here's another great example of synthesis of highly strained compounds.

Bertrand has prepared the substituted triafulvalene **1**.<sup>1</sup> The compound is stable as a solid or in solution under inert gas. It does however react quickly with water, a remarkable addition of water across an alkene.

This is understood in terms of a very high HOMO and a low LUMO, indicating a very reactive double bond. The UV/Vis corroborates this: its absorption is at 502nm, compared to 171nm of ethylene and 217nm of 1,3-butadiene. The B3LYP/6-31G(d) structure of the tetraphenyl derivative **2** is shown in Figure 1.



1



2

**Figure 1.** B3LYP/6-31G(d) optimized structure of **2**.

Source: <http://comporgchem.com/blog/?p=114>