



# Metal Works

**Adam Smith listens to Usher's new Be718 loudspeakers, featuring a Beryllium tweeter...**

**R**ecently I found myself watching a television programme about the world's ten wildest rollercoasters. Now not only did this have me making notes on my next holiday destinations in order to try a few out (with Cedar Point, Ohio and the "Top Thrill Dragster" being top of my list!) but it started me pondering how we manage to advance our lives, both in technological and social terms, by adding an element of danger, or an aspect that makes you realise that one wrong move and something major will go wrong.

Even in the world of audio, a hint of this can add more to the listening experience. Whether it be a big valve amplifier that will burn or electrocute you if you touch it in the wrong place, an exposed Ionofane tweeter, or even an expensive and delicate moving coil cartridge with exposed innards that only requires a

briefest slip of a cueing hand to kiss goodbye to the cantilever, there is a lot to be said for that little something that makes you tread carefully and respect what you have even more. So, how do these strange musings fit into the new Usher Be718s I hear you ask? Simply put - beryllium.

Element number 4 in the periodic table, with the chemical symbol Be, it's an alkaline earth metal that has the properties of being strong and light in weight, although rather brittle. Obviously its strength and lightness make it an ideal candidate for use as a membrane material in loudspeaker drive units, as Yamaha realised back in the 1970s, equipping the NS1000s with beryllium dome midrange and treble units. The problem with beryllium is that it is not very nice stuff to work with. The dust that arises from its processing is carcinogenic, and some people have an innate sensitivity to it that can result in Chronic Beryllium

Disease, which is treatable but not curable.

However, in the same way that technology has made those wild rollercoasters possible, beryllium can now be processed under controlled conditions and with negligible risk to life and limb; you will all no doubt be glad to know that beryllium compounds are no longer tasted for their sweetness in order to verify the metal's presence, as early researchers did!

Consequently there was inevitably going to be a resurgence in the element's use and Usher are one of the most notable to get their foot into the door with the new, upgraded Beryllium Dancer series of loudspeakers, the smallest of which are the standmounting Be718s here.

Using a one inch (25mm) tweeter, the dome of this is made from Beryllium Oxide Ceramic, giving a stiffness to weight ratio of over five times greater than that of aluminium

