

Engineers introduce 'beans' to cool and then maintain hot beverage temps

May 3 2011, by Bob Yirka



(PhysOrg.com) -- Buddies and mechanical engineers, Dave Petrillo and Dave Jackson, have, thanks to Kickstart.com, begun a business selling the Coffee Joule (clearly a play on the word for joule, a unit of energy,

and jewel, the stuff you wear as bling), a stainless steel bean they've invented that will first cool a hot drink, then maintain it at a consistent 140°F (60° Celsius) temperature for up to five hours if the container is kept closed.

Generally used with more than one “bean” at a time, [Coffee](#) Joulies have a special secret ingredient inside of them that works first as a heat sink; absorbing heat from the hot coffee or other beverage that surrounds them, until reaching 140F°, at which point the secret ingredient melts causing it to reverse course and to then start working as a heat source as the absorbed heat is radiated back into the beverage as the secret ingredient slowly solidifies once again.



The Dave's as they're called, won't let on what exactly is inside the [beans](#), but they claim its safe enough to ingest. They refer to it as a “non-toxic phase change material.” The outer cover is all stainless steel, which they say is the same grade as that used for cutlery, which they point out, has a very long safety record as a means for both the drinking of hot beverages and for stirring them.

A natural question might be to ask if the beans might work for cold beverages as well, as a replacement for ice cubes, but that question has not been addressed thus far. At this point it would seem unlikely as there is no indication that the special ingredient inside the beans would absorb and hold any more of a chill than freezing anything else and dumping it in your cup.



At any rate, to use Coffee Joulies, once on the market that is, coffee drinkers would place a few of them in a cup, pour in their hot beverage of choice, wait a moment for the beans to cool, then commence to drinking. Afterwards, the beans could be washed the same way as other [stainless steel](#) utensils, though they likely would only need a little rinsing. No word yet on whether the phase-change material inside the beans degrade over time, and if so, how long it might take.

More information: www.joulies.com/

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