cutter, for breaking the multi-well plate apart into tube strips. In other cases, such multi-well plates, are manually divisible but they are only divisible into segments (such as 32 well blocks) and are not amenable for dividing into single strips (such as either tube strips). In yet other cases, in existing manually divisible multi-well plates, which can be divided into single strips, the dividing process leaves sharp edges that cause glove tears or injury to users.

[0007] A need therefore exists for multi-well plates that are manually divisible, without use of any cutting tool, in single tube strip formats that that address at least some of the problems described above.

SUMMARY

[0008] One aspect of the present disclosure provides a multi-well plate that is manually divisible into strips of wells or tubes that are compatible with reagent dispensing by human or automation systems in manufacturing environments. One aspect of the present disclosure provides a multi-well plate that is manually divisible into tube strips or well strips (such as but not limited to 8-well or 8-tube strips) or into segments comprising at least one or more tube strips (segments of 8-tube or 8-well strips such as segments with 16, 24, 32, 40, etc. tubes). The terms wells or tubes are used alternatively in this application.

[0009] In some embodiments, the disclosure provides a multi-well plate comprising a frame made of a first material, wherein the frame has a planar top surface having an array of a plurality of holes arranged in a columnar pattern (forming a columnar pattern of a plurality of holes) on the top surface, the frame further comprising an array of segmented breaking features arranged in a columnar pattern (forming a columnar pattern of breaking features) alternating with the columnar pattern of the plurality of holes, and a plurality of wells made of a second material, wherein the wells are placed into the plurality of holes on the top surface of the frame, wherein the multi-well plate is manually divisible along a center of the segmented breaking features into one or more columns of multi-well strips, and wherein the segmented breaking feature comprises an array of petal shaped cuts that extend from the top surface of the frame through a bottom surface of the frame and a series of undercuts on a bottom surface of the frame portion, arranged such that the undercuts alternate with the petal shaped cuts.

[0010] In some embodiments, multi-well plates of the disclosure, are manually divisible along the center of the segmented breaking features into a plurality of single columns of multi-well strips. Multi-well strips can also be divided into segments comprising at least two columns of multi-well strips.

[0011] In some embodiments, segmented breaking features of the multi-well plates of the disclosure, comprise an array of petal shaped cuts that extend from the top

CLAIMS:

1. A multi-well plate comprising:

   a frame made of a first material, wherein the frame has a planar top surface having an array of a plurality of holes arranged in a columnar pattern on the top surface, the frame further comprising an array of segmented breaking features arranged in a columnar pattern alternating with the columnar pattern of the plurality of holes; and

   a plurality of wells made of a second material, wherein the wells are placed into the plurality of holes on the top surface of the frame,

   wherein the multi-well plate is manually divisible along a center of the segmented breaking features into one or more columns of multi-well strips; and

   wherein the segmented breaking feature comprises an array of petal shaped cuts that extend from the top surface of the frame through a bottom surface of the frame and a series of undercuts on a bottom surface of the frame portion, arranged such that the undercuts alternate with the petal shaped cuts.

2. The multi-well plate of claim 1, wherein the multi-well plate is manually divisible along the center of the segmented breaking features into a plurality of single columns of multi-well strips.

3. The multi-well plate of claim 1, wherein the undercuts are V-Shaped undercuts.

4. The multi-well plate of any preceding claim, wherein a chimney located on the frame interlocks with a lug located on a side of the well.

5. The multi-well plate of any preceding claim, wherein the first material comprises polycarbonate and the second material comprises polypropylene.

6. The multi-well plate of any preceding claim, wherein the wells are directly moulded into the frame utilising form locking connections.

7. The multi-well plate of any preceding claim, wherein the frame further comprises a skirt that wraps all around the perimeter of the plate.

8. The multi-well plate of any of claims 1-6, wherein the frame further comprises a skirt that is located at the four corners of the plate.

9. The multi-well plate of any preceding claim, comprising 24, 48, 96, 384 or 1536 wells.

10. The multi-well plate of claim 9, comprising 96 wells.

11. The multi-well plate of any preceding claim, wherein the plate can be manually divided into one or more columns of 8-tube strips or into segments comprising at least one column of 8-tube strips.