DRINK CUP LID

PRIORITY CLAIM

[0001] This application claims priority under 35 U.S.C. § 119(e) to US Provisional Application Serial No. 61/801,433, filed March 15, 2013, which is expressly incorporated by reference herein.

BACKGROUND

[0002] The present disclosure relates to drink cups, and particularly to lids for drink cups. More particularly, the present disclosure relates to a seal established between a drink cup and a lid mounted on the drink cup.

SUMMARY

[0003] According to the present there is provided a liquid container comprising:

a cup including a brim, a floor, and a side wall extending from the brim toward the floor, the side wall including a frustoconical inner surface cooperating with the floor to form an interior liquid reservoir chamber of the cup, the brim including a curved outer boundary surface mating with an uppermost portion of the frustoconical inner surface of the side wall and extending away from the uppermost portion, the curved outer boundary surface of the brim having a rounded shape in vertical cross section that extends along a generally circular path subtends an angle of at least 180°, the curved outer boundary surface of the brim having an annular inner sealing portion adjacent to the frustoconical inner surface of the side wall, an annular outer sealing portion away from the inner sealing portion, and an annular middle seating portion interposed between the annular inner and outer sealing portions, and

a lid including a central closure and a brim mount coupled to the central closure and configured to be mounted on the curved outer boundary surface of the brim to retain the central closure in a position closing a mouth opening into the interior liquid reservoir chamber formed in the cup, the brim mount including a first seal ring arranged to engage the uppermost portion of the frustoconical inner surface of the side wall to establish a first annular liquid flow barrier between the lid and the

cup, a second seal ring arranged to engage the annular inner sealing portion of the curved outer boundary surface of the brim to establish a second annular liquid flow barrier between the lid and the cup, a third seal ring arranged to engage the annular middle sealing portion of the curved outer boundary surface of the brim to establish a third annular liquid flow barrier between the lid and the cup, and a fourth seal ring arranged to engage the annular outer sealing portion of the curved outer boundary surface of the brim to establish a fourth annular liquid flow barrier between the lid and the cup.

[0003A] The present disclosure also provides~~disclosure~~, a liquid container comprises a lid adapted to mate with the brim of a cup. The cup also includes a floor and a side wall extending from the brim toward the floor.

[0004] In illustrative embodiments, the lid includes a central closure formed to include the liquid-discharge outlet and a ring-shaped brim mount arranged to surround the central closure. The brim mount of the lid is configured to mate with the brim of the cup to hold the central closure in a stationary position closing a cup mouth opening into an interior liquid reservoir chamber formed in the cup and placing the liquid-discharge outlet in fluid communication with any liquid stored in the interior liquid reservoir chamber of the cup.

[0005] In illustrative embodiments, the brim mount includes four seal rings. Three of the seal rings are configured to mate with the brim of the cup to establish three annular liquid flow barriers between the cup and the lid. Another of the seal rings on the brim mount is configured to mate with an upper portion of an interior surface of the side wall to establish another liquid flow barrier between the cup and the lid. Two of the four seal rings can be viewed as interior seal rings since they mate with interior portions of the side wall and the cup brim. Another two of the four seal rings can be viewed as exterior seal rings since they mate with exterior portions of the