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ICE BAG FOR COOLING OF A BEVERAGE

Abstract

The invention relates to an ice bag to cool a beverage without mixing the beverage and the coolant. The bag comprises a chamber (**10, 11**) for a beverage and a chamber (**10, 11**) for a coolant, preferable ice. The chambers are separated by a separation layer (**12**) of foil or plastic, and the beverage is cooled, when said separation layer is in contact with the beverage on one side and with the coolant on the other side.

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Background/Summary

FIELD OF THE INVENTION

[0001] An ice bag for cooling of a beverage without mixing the beverage and the coolant. The bag comprises a chamber for a beverage and a chamber for a coolant, preferable ice. When the beverage is poured into the chamber for beverage, the coolant in the chamber for coolant cools the beverage.

BACKGROUND OF THE INVENTION

[0002] When wanting to have a cold beverage, for instance cold wine, but the beverage is not cold, quick cooling of the beverage would be desirable. However adding ice cubes to a drink may cool the drink, but it may also dilute it. Putting the beverage into the refrigerator or even a freezer may cool the beverage, but it takes time.

[0003] Cooling a beverage from room temperature to 5° Celsius in a refrigerator may take 2 hours and in a freezer 45 minutes. In an ice bucket, a bucket filled with ice wherein a bottle of beverage is placed, it takes about 20 minutes to cool the beverage.

[0004] Hence, an improved device or method for cooling a beverage would be advantageous, and in particular, a more efficient and/or reliable cooling device or method for cooling the beverage fast would be advantageous.

OBJECT OF THE INVENTION

[0005] It is the object of the present invention to provide an ice bag and a method for fast and efficient cooling of a beverage.

[0006] It is a further object of the present invention to provide an alternative to the prior art.

[0007] In particular, it may be seen as an object of the present invention to provide an ice bag that solves the above mentioned problems of the prior art with fast and efficient cooling of a beverage without diluting the beverage.

SUMMARY OF THE INVENTION

[0008] Thus, the above described object and several other objects are intended to be obtained in a first aspect of the invention by providing an ice bag to cool a beverage, the ice bag comprises an inner chamber and an outer chamber, so that the outer chamber substantially surrounds the inner chamber; [0009] the inner chamber and the outer chamber are separated by a separation layer of foil or plastic; [0010] the inner chamber comprises [0011] i. a plurality of ice cube compartments, and [0012] ii. an inner inlet for filling a coolant, preferably water to be frozen, into the inner chamber, where the coolant is distributed between the plurality of ice cube compartments, [0013] the outer chamber comprises: [0014] i. an outer inlet for filling a beverage into the outer chamber, [0015] wherein the beverage is cooled, when said separation layer, which separates the inner chamber and the outer chamber, is in contact with the beverage and with the coolant.

[0016] The ice bag is made of a soft plastic material, and [0017] the inner chamber and the outer chamber are either fixed to the same closure element or each comprises a closure element, the closure element(s) is/are resealable mechanisms.

[0018] “Soft plastic material” in the context of this invention is to be understood as a a type of plastic that have a flexible or pliable nature, rather than being hard or rigid. Soft plastic material can be folded or rolled up and adapts easily to the shape of the surroundings. These materials are usually made from polymers that have a low melting point and are often classified as thermoplastics. Soft plastic materials have a variety of properties that make them useful for many applications. For example, they are often lightweight, water-resistant, and can be easily molded or shaped into different forms. Some common examples of soft plastic materials include polyethylene, polypropylene, PVC, and silicone.

[0019] The ice bag of the invention comprises an inner chamber and an outer chamber. A coolant

may be poured into the inner chamber. Preferably, the coolant is water; the water may then be frozen to ice in a freezer.
[0020] When cooling a beverage, the ice bag is taken from the freezer, and the beverage is poured into the outer chamber. The beverage is then cooled, as the beverage is in contact with one side of the separation layer, which is separating the inner chamber and the outer chamber, and the coolant, preferable comprising ice, is in contract with the other side of the separation layer. Therefore, the beverage and the coolant are only separated by the thin separation layer, maximizing the cooling effect of the beverage.
[0021] This is a huge advantage compared with, for instance, placing a bottle in an ice bucket, where the beverage in the bottle and the ice are separated by the glass the bottle is made of. The glass is isolating the beverage from the ice requiring that also the bottle be cooled down, which is slowing the cooling process. The beverage may be wine, juice, soda or any kind of drink, which preferable is drunk cold.
[0022] The ice bag preferably may be rectangular in shape, comprising two long sides and two short sides. The inner inlet and the outer inlet preferable may be placed in one of the short sides. Alternatively, the ice bag may have any form suitable for an ice bag.
[0023] By the outer chamber substantially surrounding the inner chamber, the further advantage is achieved that all sides of the inner chamber, containing the coolant or ice, is in contact with the beverage in the outer chamber, optimizing the efficiency of the cooling process, and thereby reducing the time needed to cool the beverage down to the desired temperature.
[0024] The inner chamber may be divided into ice cube compartments, this ensures that when the ice melts the ice does not clump together, but is kept in place in the ice cube compartment achieving a substantially even distribution of the ice in the inner chamber, also when the ice is partly melted.
[0025] There may be small passages between the ice cube compartments to allow the fluid, preferable water, to pass between the ice cube compartments, but ice clumps too large to pass through the small passages stay in the ice cube compartment, where it is located. This ensures a substantially even distribution of the ice in the bag, also when some of the ice is melted and the ice clumps gets smaller.
[0026] The coolant, preferable water, is poured into the inner chamber through an inner inlet. The water is frozen to ice. To cool the beverage, the beverage is poured into the outer chamber through an outer inlet.
[0027] The invention is particularly, but not exclusively, advantageous for obtaining a fast and efficient cooling of a beverage without diluting the beverage. The beverage in an ice bag of the invention may be cooled from room temperature to 5°-6° Celsius in 5 minutes. Which is considerable faster than in a refrigerator or in an ice bucket.
[0028] The beverage may be a bottle of wine, and the ice bag is big enough to hold the content from a bottle of wine. The ice bag can cool down the wine from a bottle of wine in 5 minutes. An advantage is that the beverage is cooled without being diluted. If ice cubes is used to cool the beverage, the cooling may also be done fast, but the ice is melting in the beverage and thereby diluting the beverage. This is avoided using the ice bag.
[0029] The cooling capacity of the bag is so that after cooling down a bottle of wine, the ice bag may cool down another bottle of wine before the ice is melted.
[0030] To enhance the cooling speed, and to even the temperature, the ice bag may be turned 4 times doing the 5 minutes, once every minute, it takes to cool the beverage in a full ice bag. Turning the ice bag makes the beverage circulate and distributes the cooling of the beverage.
[0031] The ice bag may be used to cool red wine from room temperature to 18° Celsius in less than a minute, actually test shows it may take only 15 seconds to cool down to 18° Celsius. Wine connoisseurs often recommend 18° Celsius for enjoyment of red wine.
[0032] Beverage enjoyed during a hot summer day is warmed up fast in the drinking glass. It is can

be an advantage that the beverage, which is poured into the drinking glass, is cooled to 2-3 degrees Celsius, which is colder than the preferred drinking temperature to compensate for the fast heating up of the beverage. The bag makes it very easy to make this extra cooling e.g. to 3 degrees Celsius, by just storing the wine a little longer in the bag. This is very difficult to obtain by normal cooling in a refrigerator or in an ice bucket.

[0033] When a beverage is to be poured from the bag, the outer inlet is opened, and the beverage may be poured out of the bag. For instance, two glasses of wine may be poured from the bag, then the outer inlet may be closed again, and the remaining wine in the ice bag is kept cold by the coolant, until the next pouring of wine is needed.

[0034] The ice bag is ideal for a picnic, a boat trip, or wine in the park, away from home, as already cooled wine or beverage may be poured into the pre-frozen bag. As the beverage is already cold, it does not need so much cooling effect, and it will keep cold for a very long period, more than 2 hours, improving the picnic experience.

[0035] There may be some air in the outer chamber, even if the bag contains a complete bottle of wine, then if the bag is laying on the side, with one of the outer foil sheets against the ground, then the air will move to the upper side against the other outer foil layer forming an air layer. The air layer will then isolate the beverage from the outside temperatures and therefore the remaining beverage or wine will keep cool for a very long period, as the air isolation will reduce the ice melting.

[0036] An ice bag does not take up much place in the freezer, if there is no room in the refrigerator for a bottle of wine, there is no need to put the bottle in the refrigerator, as the ice bag may be taken from the freezer and used that to cool the bottle of wine, so the bottle does not take up space in the refrigerator.

[0037] According to an embodiment, the inner chamber comprises at least one or two inner foil sheets, the inner foil sheets constitutes the separation layer between the inner chamber and the outer chamber, and the outer chamber comprises at least one or two outer foil sheets.

[0038] The inner chamber is preferably made of two inner foil sheets, which is joined together at the outer periphery of the two inner foil sheets, except at the inner inlet. Preferably, the two outer foil sheets are placed on each side of the inner foil sheets and joined together at the outer periphery of the outer foil sheets. The inner and outer foil sheets are preferably of substantially the same size, so when the two outer foil sheets are joined together, they are also joined together with the inner foil sheets along the outer periphery, except where the inner inlet and the outer inlet is placed. Alternatively, the outer foil sheets may be larger than the inner foil sheets, but also in this case, when the two outer foil sheets are joined together, they are also joined together with the inner foil sheets.

[0039] The foil sheets preferably are formed as a rectangle with two long sides and two short sides, but the foil sheets may have any form suitable for an ice bag. In a preferred embodiment the long sides are about 29 cm and the short sides about 21 cm. The inner inlet and the outer inlet are preferably placed in one or the short sides. In alternative embodiments the ice bag may be formed in any suitable shape and size. Also the ice cube compartments may have different size in different embodiments.

[0040] In an alternative embodiment, the inner chamber may be made of only one foil sheet. The foil sheet may then be folded on the middle and joined together on the other sides, except where the inner inlet is placed.

[0041] In an alternative embodiment, the outer chamber may be made of only one foil sheet. The foil sheet may then be folded along the middle and joined together on the other edges, except where the inner inlet and the outer inlet is placed.

[0042] According to an embodiment, the inner foil sheets comprises an outer periphery, and two inner foil sheets are joined together by a peripheral joint extending along the major part of the outer periphery of said inner foil sheets, with the exception of a peripheral areal constituting the inner

inlet.
[0043] The inner chamber may in one embodiment be manufactured by placing two inner foil sheets on top of each other, then join the two inner foil sheets together, by making a peripheral joint extending along the major part of the outer periphery of said inner foil sheets. Only at the location of the inner inlet, at the peripheral areal constituting the inner inlet, the two inner foil sheets are not joined together.
[0044] The joining of the two inner foil sheets is done by heating up the outer periphery of the two inner foil sheets so their outer periphery melts together forming the peripheral joint.
[0045] After the joining, the two inner foil sheets are forming the inner chamber, which is water tight except at the inlet.
[0046] According to an embodiment, the outer foil sheets comprises an outer periphery, and the two outer foil sheets are joined together by a peripheral joint extending along the major part of the outer periphery of said outer foil sheets, forming the outer chamber, with the exception of a peripheral areal constituting the outer inlet and the inner inlet.
[0047] The outer chamber may in one embodiment be manufactured by placing two outer foil sheets on top of each other. Then the two outer foil sheets are joined together by making a peripheral joint extending along the major part of the outer periphery of said outer foil sheets. Only at the location of the inner inlet and the outer inlet, the two outer foil sheets are not joined together.
[0048] The joining of the two outer foil sheets is done by heating up the outer periphery of the two outer foil sheets so their outer periphery melts together forming the peripheral joint.
[0049] The outer foil sheets now forms an outer chamber. The inner chamber now can be placed inside the outer chamber.
[0050] According to an embodiment, the inner foil sheets and the outer foil sheets comprises an outer periphery, and the two inner foil sheets and the two outer foil sheets are all joined together by a peripheral joint extending along the major part of said outer periphery of said foil sheets with the exception of a peripheral areal constituting the inner inlet and the outer inlet.
[0051] The inner foil sheets and the outer foil sheets may have the same size, so after the inner foil sheets has been joined together, the outer foil sheets are placed at each side of the inner chamber made of the inner foil sheets, and the outer foil sheets are joined together with the inner foil sheets along the outer periphery. The joining is done by heating up the outer periphery of the inner and outer foil sheets so they melt together forming the peripheral joint.
[0052] The inner and outer foil sheets now form an inner chamber between the two inner foil sheets and an outer chamber, divided in two sections, one section on each side of the inner chamber.
[0053] According to an embodiment, the inner chamber and the outer chamber both are connected and fixed to the same closure element, the closure element is adapted to open and close the inner inlet, and the closure element is adapted to open and close the outer inlet.
[0054] The ice bag comprises an inner chamber and an inner inlet for filling coolant into the inner chamber. The ice bag comprises also an outer chamber and an outer inlet for filling beverage into the outer chamber. The inner inlet and the outer inlet may be placed on the same closure element. The closure element then comprises both the inner inlet and the outer inlet, and the closure element comprises means for opening and closing the inner inlet and means for opening and closing the outer inlet.
[0055] Alternatively, the inner inlet and the outer inlet each comprises a closure element. The inner inlet comprises a first closure element and the outer inlet comprises a second closure element. For instance, the inner inlet and the outer inlet may be placed at different sides of the ice bag. Then the first closure element for the inner inlet, and the second closure element for the outer inlet clearly also may be placed at different sides of the ice bag. The first closure element for the inner chamber may be located in one end of the ice bag and the second closure element for the outer chamber may be located in the other end of the ice bag.
[0056] According to an embodiment, the closure element for closing and opening the inner and the

outer inlets is a resealable mechanism, preferably a slider zipper, a plastic seal, a zip-lock, an adhesive strip or a Velcro strip.
[0057] The resealable mechanism, e.g. a slider zipper, for opening and closing the inner and the outer inlets may be opened and closed many times, making it possible to reuse the ice bag.
[0058] The closure element may be a plastic slider zipper. The slider zipper is divided in two parts by a stop. The stop may be made by melting the plastic slider zipper together at the location of the stop.
[0059] Each part of the slider zipper comprises an opening slider, which can open and close the part. Each part of the slider zipper can be opened separately. One part of the slider zipper comprises the inner inlet and another part comprises the outer inlet. The inner inlet may comprise an inner opening slider, when the inner opening slider is in a closed position, the inner inlet is closed, and when the inner opening slider is an open position the inner inlet is open. The outer inlet comprises an outer opening slider. When the outer opening slider is in a closed position, the outer inlet is closed, and when the outer opening slider is an open position the outer inlet is open.
[0060] The closed position of the inner inlet may be when the inner opening slider is next to the stop, alternatively, the closed position may be when the inner opening slider is in the position furthest away from the stop. Likewise for the outer opening slider, where the closed position of the outer inlet may be when the outer opening slider is next to the stop, alternatively, the closed position may be when the outer opening slider is in the position furthest away from the stop.
[0061] The inner inlet may be closed, when the inner opening slider is next to the stop, and the outer inlet may be closed, when the outer opening inlet is in the position furthest away from the stop and vice versa.
[0062] The inner inlet is in a fully open position when the inner opening slider is in a position as far away from the closed position as possible on the slider zipper, likewise, the outer inlet is in a fully open position, when the outer opening slider is in a position as far away from the closed position as possible on the slider zipper.
[0063] The advantage of using a slider zipper is that it leaves more space for the pouring of liquid without the overflow problem, known form ice-cube bags.
[0064] The slider zipper may be used to open and close the inner inlet and the outer inlet. The slider zipper may be opened and closed several times without loss of functionality.
[0065] The ice bag may be reused several times, when it is emptied from beverage, the ice bag may be cleaned or rinsed and placed in a freezer for the water to refreeze for the next time the ice bag is needed.
[0066] The opening sliders may be of different color, for instance the opening slider for the inner inlet may be blue to indicate that water is supposed to be filled into inner inlet, increasing the ease of use.
[0067] When joining the foil sheets to the closure mechanism, the inner inlet is made by joining an outer foil sheet and an inner foil sheet to one side of the closure mechanism, and the other inner foil sheet and the other outer foil sheet to the other side of the closure mechanism. The outer inlet is made by joining an outer foil sheet to one side of the closure mechanism, and joining the other outer foil sheet and both inner foil sheets to the other side of the closure mechanism.
[0068] The foil sheets may be joined to the closure mechanism by heating to melt the foil sheets onto the closure mechanism, alternatively the foil sheets are joined to the closure mechanism by glue or another adhesive bond.
[0069] Alternatively, the the inner inlet is closed by a first closure element, which may be a plastic slider zipper, and the outer inlet may be closed by a second closure element, which also may be a plastic slider zipper.
[0070] According to an embodiment, the inner chamber is divided by separate joints into a plurality of ice cube compartments.
[0071] The inner chamber may be divided into a plurality of ice cube compartment by separate

joints. The separate joints are made in the inner chamber before the inner chamber is joined with outer foil layers and/or placed inside the outer chamber. The separate joints may be shorter than the ice cube compartment, allowing water to flow between two ice cube compartments next to the separate joint.

[0072] Each separate joint between two ice cube compartments may constitute a number of individual joints. Water/fluid can pass between the individual joints into the neighbour ice cube compartment, but ice cubes cannot.

[0073] According to an embodiment, the inner chamber comprises through-going passages allowing the beverage in the outer chamber to pass through the passages in the inner chamber from one position in the outer chamber to another position in the outer chamber.

[0074] There may be through-going passages in the inner chamber, allowing beverage to pass from one side of the inner chamber to the other side of the inner chamber through the through-going passages. When the inner chamber divides the outer chamber in two parts or sections, the two parts or sections are connected through the through-going passages, allowing beverage to flow from one section of the outer chamber to the other section of the outer chamber.

[0075] It is recommended to turn the ice bag several times doing the cooling process. When the ice bag is turned, beverage may pass through the through-going passages from one side it the inner chamber to the other side of the inner chamber enhancing the cooling process and archives an even distribution of the temperature in the beverage, especially if the outer chamber is not completely full

[0076] According to an embodiment, the ice bag is made of a plastic material, which preferable is polyethylene.

[0077] The ice bag is preferably made of a soft plastic material, which may be polyethylene. The soft plastic material makes it possible to roll the bag up, when it is not in use, so that it does not take up much space. This also makes it easy to transport the ice bag, when it is not in use.

[0078] According to an embodiment, the inner chamber is made of a thinner layer of plastic material than the outer chamber.

[0079] If the outer chamber is made of thicker layer of plastic material than the inner chamber, the bag is more solid and resistant, while the thinner inner layer optimizes the heat exchange between the inner and the outer chamber.

[0080] According to an embodiment, the inner chamber is made of one plastic material and the outer chamber is made of another plastic material.

[0081] By using different materials for the outer and the inner chamber, a more resistant and robust plastic material may be used for the outer chamber, making the bag more solid and resistant.

[0082] According to an embodiment, the ice bag comprises a handle.

[0083] The handle makes it easier to pour beverage out of the ice bag as a better grip is achieved and cold fingers is avoided. The handle also makes it easier to carry the ice bag. Transporting wine in the bag with the handle away-from-home is far easier than transporting a bottle of wine, as it is easy to hold or is easily fitted into a bag with other stuff.

[0084] The handle may be placed in one of the long sides. The handle may have the same length as the long side and be about 4 cm wide. There may be four finger holes in the handle, each finger hole is about 2 cm wide.

[0085] The handle is preferable placed on the long side next to the inner inlet, so it is placed on the long side furthest away from the outer inlet, making it easier to pour the beverage out of the bag while holding the handle. Alternatively, the handle may be placed on the long side next to the outer inlet.

[0086] In a second aspect, the invention further relates to an ice bag for cooling of a beverage, the ice bag comprises an inner chamber and an outer chamber, so that the outer chamber substantially surrounds the inner chamber; [0087] the inner chamber and the outer chamber are separated by a separation layer of foil or plastic; [0088] the outer chamber comprises [0089] i. a plurality of ice

cube compartments, and [0090] ii. an outer inlet for filling a coolant, preferably water to be frozen, into the outer chamber, where the coolant is distributed between the plurality of ice cube compartments, [0091] the inner chamber comprises: [0092] i. an inner inlet for filling a beverage into the inner chamber, [0093] wherein cooling of the beverage is provided when said separation layer, which separates the inner chamber and the outer chamber, is in contact with the beverage and with the coolant.
[0094] The ice bag is made of a soft plastic material, and [0095] the inner chamber and the outer chamber are either fixed to the same closure element or each comprises a closure element, the closure element(s) is/are resealable mechanisms.
[0096] In this aspect the chambers are opposite from the first aspect, as the coolant is poured into the outer chamber and the beverage is poured into the inner chamber. This is reversed from the first aspect. In addition, in this aspect the outer chamber may be divided into ice cube compartments.
[0097] In a third aspect, the invention further relates to a method for cooling a beverage using an ice bag according to the first aspect, the method comprises the following steps: [0098] a. filling the inner chamber with coolant, preferable water, [0099] b. freezing the coolant to ice, [0100] c. filling the outer chamber with the beverage to be cooled.
[0101] In a fourth aspect, the invention further relates to a method for cooling a beverage using an ice bag according to the second aspect, the method comprises the following steps: [0102] a. filling the inner chamber with coolant, preferable water, [0103] b. freezing the coolant to ice, [0104] c. filling the outer chamber with the beverage to be cooled.
[0105] The first, second, third and fourth aspect of the present invention may each be combined with any of the other aspects. These and other aspects of the invention will be apparent from and elucidated with reference to the embodiments described hereinafter.

Description

BRIEF DESCRIPTION OF THE FIGURES
[0106] The ice bag according to the invention will now be described in more detail with regard to the accompanying figures. The figures show one way of implementing the present invention and is not to be construed as being limiting to other possible embodiments falling within the scope of the attached claim set.
[0107] FIG. **1** shows the ice bag filled with coolant and beverage.
[0108] FIG. **2** shows a cross section of the ice bag.
[0109] FIG. **3** shows the ice bag made of four foil layers.
[0110] FIG. **4** shows the inner chamber.
[0111] FIG. **5** shows the ice bag from the front.
[0112] FIG. **6***a* shows the closure element from the top.
[0113] FIG. **6***b* shows the closure element with the inner inlet opened.
[0114] FIG. **6***c* shows the closure element with the outer inlet opened.
[0115] FIGS. **7***a* and **7***b* shows an embodiment, where the inner foil sheets are shorter than the outer foil sheets.
[0116] FIG. **8** shows an embodiment, where the inner foil sheets are less wide than the outer foil sheets.
[0117] FIG. **9** shows an embodiment, where the inner foil sheets are less wide and shorter than the outer foil sheets.
DETAILED DESCRIPTION OF AN EMBODIMENT
[0118] FIG. **1** shows the ice bag **1** filled with coolant and beverage. The ice bag is substantially rectangular in shape comprising two long sides **47** and two short sides **48**. The outside of the ice bag is visible, with the outer foil sheet **17** forming the outer chamber **11** and the closure element **30**

comprising the inner inlet **14** and the outer inlet **15**. The inner inlet **14** and the outer inlet **15** preferable are placed in one of the short sides **48**.
[0119] The inner chamber **10** of the ice bag may be partly visible through the outer foil sheet **17** and the beverage, with ice cube compartments **13**. The stop **31** separates the inner inlet and the outer inlet. An inner opening slider **32** is movable along the inner inlet to open or close the inner inlet. An outer opening slider **33** is movable along the outer inlet to open or close the outer inlet. In FIG. **1**, both the inner opening slider **32** and the outer opening slider **33** are in a closed position. The two other foil sheets **17** are joined together at the outer periphery **29**. An air layer **39** is formed in the outer chamber **11** in the part of the ice bag facing upward.
[0120] FIG. **2** shows a cross section of the ice bag **1**. The ice bag comprises an inner chamber **10** and an outer chamber **11**. The inner chamber **10** is divided in a number of ice cube compartments **13**, where the ice cube departments are separated by separate joints **18**. The ice bag is full with water or ice in the ice cube compartments **13** of the inner chamber **10** and wine in the outer chamber **11**. An air layer **39** is formed, in the part of the ice bag facing upward, at the upper placed of the outer foil sheets **17**.
[0121] The inner chamber is made of two inner foil sheets **16**. Water may be filled into the inner chamber **10** through an inner inlet in the closure element **30**. The water is divided between the ice cube compartments **13**. Water may pass through small openings in the separate joints **18** to fill all the ice cube compartments. The outer chamber **11** is surrounding the inner chamber **10**. The outer chamber is made of two outer foil sheets **17**. Beverage to be cooled may be poured into the ice bag through the outer inlet in the closure element **30**. The inner foil sheets **16** is forming the separation layer **12** separating the inner chamber **10** and the outer chamber **11**, avoiding the beverage and the ice/water to be mixed. Further, the thin separation layer **12** ensures a close contact for heat exchange between the coolant/ice in the inner chamber and the beverage in the outer chamber.
[0122] When water has been filled into the inner chamber **10**, the ice bag **1** may be placed in a freezer to freeze the water to ice. When a beverage needs cooling the ice bag is taken from the freezer and the beverage is poured into the outer chamber. The ice bag then cools down the beverage.
[0123] FIG. **3** shows that the ice bag may be made of four foil layers, two inner foil layers **16** and two outer foil layers **17**. First, the two inner foil layers are joined together to form the inner chamber by joining the outer periphery **29** of the two inner foil layers, except at the location of the inlet. Then the separation joints are made in the inner chamber. Next, the outer foil layers are joined to the inner foil layers by joining the outer periphery **29** of all foil layers, except at the location of the inner and outer inlets.
[0124] The four foil layers in FIG. **3** are rectangular in shape having two long sides **47** and two short sides **48**. But, the foil layers may have any shape suitable for making an ice bag.
[0125] FIG. **4** shows the inner chamber **10**. The inner chamber is made of two inner foil sheets **16** joined at the outer periphery **29** with the peripheral joint **23**, except at the location of the inner inlet **14**. FIG. **4** shows the inner chamber, before the outer chamber is added, and before the closure element is added.
[0126] Separate joints **24** are made to divide the inner chamber in several ice cube compartments **26**. The separate joints **24** may be shorter than the ice cube compartments **26**. A separate joint **24** between two ice cube compartments **26** may comprise individual joints (not shown), where the separation joint is divided in several individual joints with a small opening between each individual joint, allowing water to flow from one ice cube compartment to another ice cube compartment. Water can also flow from one ice cube compartment to the next ice cube compartment through openings **28** next to the separation joints **24**. Thereby, all ice cube compartments **26** in the inner chamber **10** can be filled by water poured into the inner chamber through the inner inlet **14**.
[0127] Through-going passages **25** may be made in the inner chamber **10** by welding or melting the edges of the through-going passages **25** to join the two inner foil sheets together, making a passage

from one side of the inner chamber to the other side of the inner chamber.
[0128] In FIG. **4** the through-going passages **25** are placed in the lower part of the inner chamber **10**, but the through-going passages may be placed in any position in the inner chamber.
[0129] FIG. **5** shows the ice bag **1** from the front. Therefore, only one of the outer foil sheets **17** can be seen. The opposite placed outer foil sheet is not visible. The inner foil sheets **16** with the ice cube compartments **26** are visible through the outer foil sheet **17**. All the foil sheets are joined together by a peripheral joint **23** in the outer periphery **29**. Also, the foil sheets are joined to the closure element **30**. The closure element forms an inner inlet **14** and an outer inlet **15**. A stop **31** is made in the closure element between the inner inlet and the outer inlet.
[0130] The bag may also comprises a handle **41** as shown on FIG. **5**, which may be made by the two outer foil sheets having an additional section, in which a handle may be made, to make it easier to carry the ice bag **1**. The handle **41** is located at one of the long sides **47** of the ice bag, the handle has about the same length as the bag. Preferable, the handle is located at the long side **47** furthest away from the outer inlet **15**. Preferably, four finger holes **40** are placed centred at the middle of the handle **40**, through which fingers can be entered holding the bag. Centring the holes gives a better balance, when walking with it. The finger holes are about 2 cm wide, with about 1 cm between them.
[0131] FIG. **6***a* shows the closure element **30** from the top. The closure element comprises a slider zipper **34** made of plastic material; the slider zipper comprises a first zipper strip **35** and a second zipper strip **36**. The first zipper strip and the second zipper strip can engage each other to close the slider zipper, or they can be separated to open the slider zipper.
[0132] The slider zipper **34** is divided in two parts, the inner inlet **14** and the outer inlet **15**. A stop **31** divides the inner inlet and the outer inlet. The inner inlet and the outer inlet can be opened or closed separately. An inner opening slider **32** can open or close the inner inlet. In FIG. **6***a*, the inner inlet is closed, as the first zipper strip **35** and the second zipper strip **36** engages closing the inner inlet. An outer opening slider **33** can open or close the outer inlet. In FIG. **6***a*, the outer inlet **15** is closed as the first zipper strip **35** and the second zipper strip **36** engages closing the outer inlet.
[0133] The inner inlet **14** can be opened by moving the inner opening slider towards the stop **31**, the inner opening slider then separates the first zipper strip **35** and the second zipper strip **36**, opening the inner inlet. When moving the inner opening slider away from the stop **31** towards the long side of the ice bag, then the inner opening slider makes the first zipper strip and the second zipper strip engage, and thereby closing the inner inlet.
[0134] Likewise, the outer inlet **15** can be opened by moving the outer opening slider **33** towards the stop **31**, and the outer inlet can be closed by moving the outer opening slider **33** away from the stop **31** towards the side of the ice bag.
[0135] FIG. **6***b* shows that when the inner opening slider **32** is moved to engage the stop **31**, the inner inlet **14** is fully open. The outer inlet **15** is closed as the outer opening slider **33** still is in the closed position.
[0136] FIG. **6***c* shows that when the outer opening slider **33** is moved to engage the stop **31**, the outer inlet **15** is fully open. The outer inlet **14** is closed as the inner opening slider **32** still is in the closed position.
[0137] FIGS. **7***a*, **7***b* and **7***c* shows an alternative embodiment, where the inner foil sheets **16** are shorter than the outer foil sheets **17**. This leaves a passage **71** below the inner chamber **10**, where the beverage can move from one side of the inner chamber to the other side of the inner chamber. FIG. **7***c* shows the ice bag **1** made of the outer foil sheets **17** and inner foil sheets **16**, with the passage **71** below the inner foil sheets, and the closure element **30**. The inner foil sheets **16** are shown with a dotted line, as it is inside the ice bag **1**, covered by the outer foil sheet **17**.
[0138] FIGS. **8** and **9** shows alternative embodiments, where the inner foil sheets **16**, shown with a dotted line, are less wide than the outer foil sheets **17**. In FIG. **8**, the inner foil sheets **16** are joined with the outer foil sheets **17** in the bottom and at the closing element **30**. In FIG. **9**, the inner foil

sheets **16** are both less wide and shorter than the outer foil sheet **17**, and the inner foil sheets **16** and the outer foil sheets **17** are only joined at the closing element **30**.

[0139] The opening for the inner chamber has a flexible open-close function. This means that the user can decide for himself which cooling medium he wants to use, which can provide increased functionality. If the inner chamber is filled with e.g. diluted juice, this will be able to function as a cooling medium during freezing. When the liquid that is to be cooled has been poured into the outer chamber, cooled and poured out again, part of the cooling medium in the inner chamber, e.g. the diluted juice, will have melted into liquid. This cold liquid (juice water) can then-through the flexible closing function-be poured out and also enjoyed chilled. In short, a 'two-in-one' function-cold wine for the adults and juice for the children in the same ice pack. Correspondingly, you will also be able to choose to pour juice concentrate into the inner chamber and general water in the outer chamber. Cold chilled water can then be mixed with melted juice concentrate.

[0140] The inner chamber is constructed like an ice cube bag in thin plastic-outer chamber also is in thin plastic-when using, the liquid that you want to cool may be poured into the outer chamber and then poured out. The ice cubes in the inner chamber itself have such a large cooling capacity that there are still ice cubes in the inner chamber after use—although they have of course become a little smaller due to the meltdown. It is possible to use these 'residual ice cubes' to cool other liquids, e.g. soda as regular ice cubes, as both the inner chamber and the outer chamber are made of thin PE plastic, which can be easily broken to gain access to the ice cubes. You could say that it is another 'two-in-one' function—cold wine and cold soda/drinks at the same time.

[0141] The ice bag is designed in the preferred embodiment so that the cooling element (inner chamber) is in the middle of the liquid (the through-going passages and the practical filling of liquid means that the liquid will always be distributed on both sides of the cold inner chamber. The ice bag cooling from the middle, has the effect that the cold inner chamber can cool from both sides simultaneously (large cooling surface), which enables a very fast cooling, a bottle of wine from 21 degrees to 6 degrees in 5 min. This construction makes, that you can get a much higher cooling effect per volume (cm.sup.3), than a construction which only cool from the outside. This good cooling effect means that the ice bag can remain relatively compact and can thus be placed more easily in a fridge-freezer and easy to take away from home.

[0142] The material the ice bag is made of is a soft thin transparent plastic film (PE). This makes the cooling unit very compact and flexible, which means that it can very easily fit in a fridge-freezer, as it can be positioned so that it adapts to the other frozen goods in the freezer. The thin plastic film (e.g. 35 μm) in the inner chamber also helps to ensure a very fast 'cooling transfer' effect between ice and liquid. The other patents referred to have a thicker material between the cooling element and liquid, which the cooling must first pass through. The soft transparent foil of both the outer and inner chamber also means that it is easy to feel by physically touching the bag whether the cooling element (the ice cubes) has arrived in solid form and is therefore ready for use. The other patents that refer to the cooling element hidden in a solid form without temperature identification and this makes it difficult to see when the cooling unit has reached a sufficiently low temperature so that it can be used.

[0143] The ice bag has a special construction of the outer chamber in thin flexible PE plastic and is only welded around the perimeter. The special construction with the thin soft plastic foil of the outer chamber means that when the ice bag is put into use and laid flat, the outer chamber automatically adapts to the liquid in the ice bag. The liquid settles at the bottom against the outer chamber and the flexible outer chamber ensures that the inner chamber with the ice cubes will always float on top of this liquid. The through-going holes and the practical filling ensure that liquid also gets on the upper side of the ice bag.

[0144] The floating inner ice-chamber with through-going holes actually increase the relative cooling effect—cooling per cm.sup.3 liquid in the outer chamber—as the liquid in the outer chamber is being taped/reduced. The floating inner chamber-laid flat in a vertical position—has the

same cooling contact surface, above and beneth, the floating inner ice-chamber, wether the outer chamber is 100% full of liquid or e.g. only 50% full. This is based on the natural principle that ice has a lower desity then liquid, e.g. wine, hence allways float independently of the actual liquid volume in the outer chamber.

[0145] Known prior art products have a fixed ‘cooling contruction’, hence having a reduced cooling effect, when liquid is being taped/reduced. Some of the cooling surface in known prior art products will not be in contact with the remaining liquid, but air instead, when the liquid volume becomes less after taping. Hence the cooling effectiveness and cooling speed becomes less comparred to the cooling performance of this invention.

[0146] The upper part of the flexible outer chamber, when in use it lies flat on a surface, also has the function of automatically adapting to the amount of liquid and air that lies above the ice cubes/inner chamber. Due to the through-going holes in the inner chamber, the air that is always in the ice bag during use will always settle at the top. I.e. when the ice bag lies flat, the air will be trapped between the inner chamber with the ice cubes and the upper outer chamber part that faces upwards. This air will always be warmer than the liquid, since this air gets heat through the plastic foil from room temperature, but the liquid is cooled by ice in the inner chamber. Since the air in the upper part of the bag is relatively warmer and the outer chamber is flexible, the outer chamber facing upwards will be ‘inflated’ and form an ‘air cushion insulation’ between room temperature and the cold inner chamber, which is very effective because good insulating properties of air. This has the very special function that the insulation effect from the air cushion actually gets better and better, the less liquid there is in the ice bag. That is the more you pour from the ice pack, the better the remaining liquid is isolated.

[0147] Through-going holes in the inner chamber allow for accelerated cooling through greater liquid flow past the cooling medium/inner chamber. The through-going holes in the inner chamber enable the liquid that is to be cooled to easily circulate around the cold inner chamber, which increases the cooling speed. This can e.g. be done by turning the ice bag from one end to the other when it is lying on a flat surface. You get a similar effect if you transport the ice pack away from home, which automatically creates a little liquid movement in the ice pack.

[0148] In exemplary embodiments E1-E15, the invention may relate to:

[0149] E1. An ice bag to cool a beverage, the ice bag (**1**) comprises an inner chamber (**10**) and an outer chamber (**11**), so that the outer chamber substantially surrounds the inner chamber; [0150] the inner chamber (**10**) and the outer chamber (**11**) are separated by a separation layer (**12**) of foil or plastic; [0151] the inner chamber (**10**) comprises [0152] i. a plurality of ice cube compartments (**13**), and [0153] ii. an inner inlet (**14**) for filling a coolant, preferably water to be frozen, into the inner chamber (**10**), where the coolant is distributed between the plurality of ice cube compartments (**13**), [0154] the outer chamber (**11**) comprises: [0155] i. an outer inlet (**15**) for filling a beverage into the outer chamber (**11**), [0156] wherein the beverage is cooled, when said separation layer (**12**), which separates the inner chamber (**10**) and the outer chamber (**11**), is in contact with the beverage and with the coolant.

[0157] E2. The ice bag according to embodiment E1, wherein the inner chamber (**10**) comprises at least one or two inner foil sheets (**16**), the inner foil sheets constitutes the separation layer (**12**) between the inner chamber (**10**) and the outer chamber (**11**), and the outer chamber comprises at least one or two outer foil sheets (**17**).

[0158] E3. The ice bag according to embodiment E2, wherein the inner foil sheets (**16**) comprises an outer periphery (**29**), and two inner foil sheets (**16**) are joined together by a peripheral joint (**23**) extending along the major part of the outer periphery (**29**) of said inner foil sheets (**16**), with the exception of a peripheral areal constituting the inner inlet (**14**).

[0159] E4. The ice bag according to any of the embodiments E2 or E3, wherein the outer foil sheets (**17**) comprises an outer periphery (**29**), and the two outer foil sheets (**17**) are joined together by a peripheral joint (**23**) extending along the major part of the outer periphery (**29**) of said outer foil

sheets (**17**), forming the outer chamber (**11**), with the exception of a peripheral areal constituting the outer inlet (**15**) and the inner inlet (**14**).
[0160] E5. The ice bag according to any of the embodiments 2-4, wherein the inner foil sheets (**16**) and the outer foil sheets (**17**) comprises an outer periphery (**29**), and the two inner foil sheets (**16**) and the two outer foil sheets (**17**) are all joined together by a peripheral joint (**23**) extending along the major part of said outer periphery (**29**) of said foil sheets with the exception of a peripheral areal constituting the inner inlet (**14**) and the outer inlet (**15**).
[0161] E6. The ice bag according to any of the embodiments 1-5, wherein the inner chamber (**10**) and the outer chamber (**11**) both are connected and fixed to the same closure element (**30**), the closure element is adapted to open and close the inner inlet (**14**), and the closure element is adapted to open and close the outer inlet (**15**).
[0162] E7. The ice bag according to any of the embodiment 6, wherein the closure element (**30**) for closing and opening the inner and the outer inlets (**14**, **15**) is a resealable mechanism, preferably a slider zipper, a plastic seal, a zip-lock, an adhesive strip or a Velcro strip.
[0163] E8. The ice bag according to any of the embodiments 1-7 wherein the inner chamber (**10**) is divided by separate joints (**24**) into a plurality of ice cube compartments (**26**).
[0164] E9. The ice bag according to any of the embodiments 1-8, wherein the inner chamber (**10**) comprises through-going passages (**25**) allowing the beverage in the outer chamber (**11**) to pass through the passages (**25**) in the inner chamber (**10**) from one position in the outer chamber (**11**) to another position in the outer chamber (**11**).
[0165] E10. The ice bag according to any of the embodiments 1-9, wherein the ice bag (**1**) is made of a plastic material, which preferable is polyethylene.
[0166] E11. The ice bag according to any of the embodiments 1-10, wherein the inner chamber (**10**) is made of a thinner layer of plastic material than the outer chamber (**11**).
[0167] E12. The ice bag according to any of the embodiments 1-11, wherein the inner chamber (**10**) is made of one plastic material and the outer chamber (**11**) is made of another plastic material.
[0168] E13. The ice bag according to any of the embodiments 1-12, wherein the ice bag comprises a handle.
[0169] E14. An ice bag for cooling of a beverage, the ice bag (**1**) comprises an inner chamber (**10**) and an outer chamber (**11**), so that the outer chamber substantially surrounds the inner chamber;
[0170] the inner chamber (**10**) and the outer chamber (**11**) are separated by a separation layer (**12**) of foil or plastic; [0171] the outer chamber (**11**) comprises [0172] iii. a plurality of ice cube compartments (**13**), and [0173] iv. an outer inlet (**15**) for filling a coolant, preferably water to be frozen, into the outer chamber (**11**), where the coolant is distributed between the plurality of ice cube compartments, [0174] the inner chamber (**10**) comprises: [0175] i. an inner inlet (**14**) for filling a beverage into the inner chamber, [0176] wherein cooling of the beverage is provided when said separation layer (**12**), which separates the inner chamber and the outer chamber, is in contact with the beverage and with the coolant.
[0177] E15. A method for cooling a beverage using an ice bag according to embodiments 1-14, the method comprises the following steps: [0178] a. filling the inner chamber (**10**) with water, [0179] b. freezing the water to ice, [0180] c. filling the outer chamber (**11**) with the beverage to be cooled.
[0181] Although the present invention has been described in connection with the specified embodiments, it should not be construed as being in any way limited to the presented examples. The scope of the present invention is set out by the accompanying claim set. In the context of the claims, the terms “comprising” or “comprises” do not exclude other possible elements or steps. Also, the mentioning of references such as “a” or “an” etc. should not be construed as excluding a plurality. The use of reference signs in the claims with respect to elements indicated in the figures shall also not be construed as limiting the scope of the invention. Furthermore, individual features mentioned in different claims, may possibly be advantageously combined, and the mentioning of

these features in different claims does not exclude that a combination of features is not possible and advantageous.

Claims

1. An ice bag to cool a beverage, the ice bag comprises an inner chamber and an outer chamber, so that the outer chamber substantially surrounds the inner chamber; the inner chamber and the outer chamber are separated by a separation layer of foil or plastic; the inner chamber comprises i. a plurality of ice cube compartments, and ii. an inner inlet for filling a coolant, preferably water to be frozen, into the inner chamber, where the coolant is distributed between the plurality of ice cube compartments, the outer chamber comprises: i. an outer inlet for filling a beverage into the outer chamber, wherein the beverage is cooled, when said separation layer, which separates the inner chamber and the outer chamber, is in contact with the beverage and with the coolant, the ice bag is made of a soft plastic material, and the inner chamber and the outer chamber are either fixed to the same closure element or each comprises a closure element, the closure element(s) is/are resealable mechanisms.
2. The ice bag according to claim 1, wherein the inner chamber comprises at least one or two inner foil sheets, the inner foil sheets constitutes the separation layer between the inner chamber and the outer chamber, and the outer chamber comprises at least one or two outer foil sheets.
3. The ice bag according to claim 2, wherein the inner foil sheets comprises an outer periphery, and two inner foil sheets are joined together by a peripheral joint extending along the major part of the outer periphery of said inner foil sheets, with the exception of a peripheral areal constituting the inner inlet.
4. The ice bag according to claim 2, wherein the outer foil sheets comprises an outer periphery, and the two outer foil sheets are joined together by a peripheral joint extending along the major part of the outer periphery of said outer foil sheets, forming the outer chamber, with the exception of a peripheral areal constituting the outer inlet and the inner inlet.
5. The ice bag according to claim 2, wherein the inner foil sheets and the outer foil sheets comprises an outer periphery, and the two inner foil sheets and the two outer foil sheets are all joined together by a peripheral joint extending along the major part of said outer periphery of said foil sheets with the exception of a peripheral areal constituting the inner inlet and the outer inlet.
6. The ice bag according to claim 1, wherein the inner chamber and the outer chamber both are connected and fixed to the same closure element, the closure element is adapted to open and close the inner inlet, and the closure element is adapted to open and close the outer inlet.
7. The ice bag according to claim 6, wherein the closure element for closing and opening the inner and the outer inlets is a resealable mechanism, preferably a slider zipper, a plastic seal, a zip-lock, an adhesive strip or a Velcro strip.
8. The ice bag according to claim 1 wherein the inner chamber is divided by separate joints into a plurality of ice cube compartments.
9. The ice bag according to claim 1, wherein the inner chamber comprises through-going passages allowing the beverage in the outer chamber to pass through the passages in the inner chamber from one position in the outer chamber to another position in the outer chamber.
10. The ice bag according to claim 1, wherein the ice bag is made of a plastic material, which preferable is polyethylene.
11. The ice bag according to claim 1, wherein the inner chamber is made of a thinner layer of plastic material than the outer chamber.
12. The ice bag according to claim 1, wherein the inner chamber is made of one plastic material and the outer chamber is made of another plastic material.
13. The ice bag according to claim 1, wherein the ice bag comprises a handle.
14. An ice bag for cooling of a beverage, the ice bag comprises an inner chamber and an outer

chamber, so that the outer chamber substantially surrounds the inner chamber; the inner chamber and the outer chamber are separated by a separation layer of foil or plastic; the outer chamber comprises i. a plurality of ice cube compartments, and ii. an outer inlet for filling a coolant, preferably water to be frozen, into the outer chamber, where the coolant is distributed between the plurality of ice cube compartments, the inner chamber comprises: i. an inner inlet for filling a beverage into the inner chamber, wherein cooling of the beverage is provided when said separation layer, which separates the inner chamber and the outer chamber, is in contact with the beverage and with the coolant, the ice bag is made of a soft plastic material, and the inner chamber and the outer chamber are either fixed to the same closure element or each comprises a closure element, the closure element(s) is/are resealable mechanisms.

15. A method for cooling a beverage using an ice bag according to claim 1, the method comprises the following steps: a. filling the inner chamber with a coolant, preferable water, b. freezing the coolant to ice, c. filling the outer chamber with the beverage to be cooled.

16. A method for cooling a beverage using an ice bag according to claim 15, the method comprises the following steps: a. filling the outer chamber with a coolant, preferable water, b. freezing the coolant to ice, c. filling the inner chamber with the beverage to be cooled.