

## SAFETY INSTRUCTIONS

# DURAN® Beaker

mL	DURAN® BEAKER			DURAN® SUPER DUTY BEAKER	
	low form, with spout	high form, with spout	high form, without spout	low form, with spout	high form, with spout
5	21 106 07 01 <sup>1</sup>	-	-	-	-
10	21 106 08 04 <sup>1</sup>	-	-	-	-
25	21 106 14 06	-	-	-	-
50	21 106 17 06	21 116 17 04	21 117 17 05	-	-
100	21 106 24 02	21 116 24 09	21 117 24 01	-	-
150	21 106 29 08	21 116 29 06	21 117 29 07	21 107 29 09	21 118 29 08
250	21 106 36 04	21 116 36 02	21 117 36 03	21 107 36 05	21 118 36 04
400	21 106 41 03	21 116 41 01	21 117 41 02	21 107 41 04	-
600	21 106 48 06	21 116 48 04	21 117 48 05	21 107 48 07	21 118 48 06
800	21 106 53 05	21 116 53 03	-	-	-
1000	21 106 54 08	21 116 54 06	21 117 54 07	21 107 54 09	-
2000	21 106 63 01	21 116 63 08	-	21 107 63 02	-
3000	21 106 68 07	21 116 68 05	-	-	-
5000	21 106 73 06	-	-	21 107 73 07	-
10000	21 106 86 02 <sup>2</sup>	-	-	-	-

<sup>1</sup>without graduation, without Retace Code, <sup>2</sup>non-DIN/ISO size



**DURAN  
WHEATON  
KIMBLE**

Excellence in your hands

**ATTENTION:** The safety instructions are only valid for original DURAN® products. Therefore, please pay attention to the DURAN® trademark which guarantees proven DURAN® quality and highest safety during application.

### **Working under pressure and vacuum**

- DURAN® Beakers are in general not suitable for use under pressure or in a vacuum.

### **Temperature resistance**

- The maximum permissible short-term operating temperature for DURAN® is 500 °C.
- The maximum thermal shock resistance is  $\Delta T = 100$  K.
- Only subject DURAN® glassware to sudden temperature changes within the recommended limit for thermal shock resistance ( $\Delta T = 100$  K).
- Before using, the glass surfaces of the DURAN® Beakers have to be checked for damages such as scratches, cracks or nicks. Damaged beakers must not be used for safety reasons.

### **Temperature resistance at low temperatures**

- DURAN® can be cooled down to the maximum possible negative temperature and is therefore suitable for use with liquid nitrogen (approx.  $-196$  °C). As the geometry influences the thermal properties, it is recommended that only small-volume glass vessels be exposed to very low temperatures. Moreover the thermal properties of any screw caps or other components used must be borne in mind.

- When working at low temperatures, the effect of any expansion of a DURAN® vessel's contents must be borne in mind. Therefore the glass products should be frozen slanted at an angle of  $45^\circ$ , filled to a maximum of  $\frac{3}{4}$  of its capacity (to enlarge the surface area).

- During cooling and thawing ensure that the temperature difference does not exceed 100 K. In practice, therefore, stepwise cooling and heating are recommended.

- Frozen contents can be thawed by immersing the bottle in a liquid bath while taking care that the temperature difference between the contents and the bath does not exceed  $\Delta T = 100$  K. This will ensure that the frozen material is warmed uniformly from every side without damaging the beaker. The contents can, however, also be thawed slowly from above, so that the surface melts first, allowing the material to expand.

### **Autoclaving/Sterilisation**

- DURAN® Beakers are autoclavable/sterilizable.

### **Cleaning**

- Cleaning should be carried out manually in a soaking bath or automatically in a dishwasher.

- To care properly for laboratory glassware, it should be washed immediately after use at low temperature, on a short cycle and with low alkalinity.

- Laboratory apparatus that has come into contact with infectious substances or micro-organisms should be treated in accordance with the current guidelines.

### **Manual cleaning**

- The generally recognized method is to wipe and rub the glass with a cloth or sponge soaked in cleaning solution. Abrasive cleaners and abrasive sponges should not be used on laboratory glassware as these can damage the surface of the glass.
- Surface damage can affect the glass properties and limit further use of the product.
- Laboratory glassware should not be soaked for long periods in alkaline media at more than  $70$  °C since this can have an adverse effect on the printing and may cause glass corrosion. Also to be avoided is severe mechanical action e.g. scraping using a metal spoon.

### **Automatic laboratory glassware reprocessing**

- When cleaning in a dishwasher, load so that there is no glass-to-glass contact (especially the threads) to avoid chips or abrasions.

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