

## Technical Specifications for HDPE Carboys

- 1.00 HDPE Yellow / Blue colour of 35 liters capacity confirming to IS 6312 (latest) for packing of 99.85% Glacial Acetic Acid and 85% Formic Acid with inner seals and cap duly fitted with gasket, Carboys will be with self-locking type of cap only.
- 1.01 Shape: The carboys shall be rectangular (Jerry can) in shape with tilt (angular or cross) mouth, shall be stackable vertically without support and HDPE caps with inner seal provision. The carboys shall not have any bulging from the sides in both empty and filled conditions.
- 1.02 Capacity: 35 liters Brimful capacity + 5%, but not less than its nominal capacity i.e. 34 liters.
- 1.03 Weight: The weight of individual carboy shall be 2.0 kg.  $\pm$  3% tolerance limit. The average weight of carboy shall be minimum 2.0 kg.

**1.04 Dimensions: The carboy dimension shall be strictly as under :**

<b>Length</b>	<b>:</b>	<b>385 mm +5 mm /- 10 mm</b>
<b>Width</b>	<b>:</b>	<b>240 mm +5 mm /- 10 mm</b>
<b>Height</b>	<b>:</b>	<b>485 mm +5 mm /- 10 mm</b>

- 1.05 Material of construction: The carboys shall be manufactured from virgin prime quality HDPE material confirming to IS 7328 latest. Properties of HDPE Granules will be as per standard specifications of M/s RIL for HDPE Grade HD 52GB003. No reprocess grade material shall be used.

Acetic Acid carboys are required in **Yellow** colour and Formic Acid carboys are required in **Blue** colour. The shade of colour shall be as per sample provided by GNFC and uniformity shall be maintained for each lot.

Supplier shall use required quantity of U.V. Stabilizer/U.V. Stabilized master batch to protect against UV rays of Sun. All carboys supplied shall have minimum guaranteed shelf life of 1 (one) year when exposed to Sun rays in filled condition.

Vendor should inform Brand name, Name and Address of manufacturer and percentage used of UV stabilized master batch / UV stabilizer which vendor intent to use while manufacturing of carboys. Vendor shall also inform rate (inclusive of taxes and duties) for above UV Stabilized master batch / U.V. Stabilizer.

- 1.06 Carboys shall be suitable for packing of 99.85% Glacial Acetic Acid and 85% Formic Acid.
- 1.07 Printing and Color: The printing on carboys shall be on both sides as per artwork provided by GNFC from time to time. The present artwork of printing as well as embossing on cap is placed at Annexure-2 & 3.
- 1.08 (A) CARBOY CAP (Self-locking type of cap):

Carboys for	Carboy Colour	Cap colour	Insert colour	Printing colour
99.85 % Acetic Acid	Yellow	Green	Yellow	Green
85 % Formic Acid	Blue	Blue	White	Yellow

“GNFC” & logo should be embossed strictly on cap as per artwork given by GNFC as attached at Annexure-1. No screen printing to be carried out. Vendor is also requested to put their name / logo on the back of the cap and insert.

(B) Provision of Dummy cap / transit cap: During transportation, vendor will ensure that carboys are fitted with dummy cap / transit cap to restrict entry of any foreign material / rainy water / dust, etc. This provision is required to avoid contamination to GNFC’s product/s.

- 1.09 Vendor shall perform all test as per IS 6312(latest) and submit their internal test certificate along with the supply.
- 1.10 **IMDG Certificate:** Vendor shall supply all the carboys with valid IMDG certificate & UN Number. Vendor will obtain IMDG approval from Indian Institute of Packaging, Mumbai and shall submit certificate before start of the supply. Vendor shall print UN Number on each carboy on both sides as specified by GNFC/IIP. The total cost involved in obtaining IMDG certificate and UN Number from M/s IIP will be borne by vendor during contract period.
- 1.11 (A) Following test shall be carried out on sampled carboys as per IS 6312 at GNFC, Bharuch after receipt.
- Dimension measurement
  - Weight of carboy
  - Drop test
  - Stack test
  - Closure leakage test
  - Hydrostatic pressure test
  - Capacity test
  - Pin hole test
  - Any other tests as per provision of IS 6312

(B) In addition to above, following tests will be also carried out :

- Cap, inner cap and gasket will be checked for compatibility with the acid to be filled in the supplied carboys by immersion test.
  - The quality / colour of Acetic Acid / Formic Acid should not change during immersion test in acids.
  - GNFC may ask vendor / carry out Environment Stress Crack Resistance Test (ESCRT) at CIPET, Ahmedabad on random basis. The cost of testing shall be borne by vendor.
  - GNFC's test results shall be final and binding on supplier.
- 1.12 The bottom of carboy shall be marked / embossed with details of manufacturing month and year. The carboys supplied shall be checked at GNFC site for these marking and in case supply is more than 3 months old, same shall not be accepted.
- 1.13 The carboys at bottom should bear vendor's company name clearly.
- 1.14 Recovery of leaking / bursted carboys during filling operation: Though the lot is accepted based on sample testing, GNFC will recover cost of defective carboys / leaking carboys / bursted carboys found during actual filling operations at GNFC site.
- In case GNFC found large numbers of carboys with defects / excessive problem of leaking / bursting, GNFC will not use such lot and recovery will be made from vendor for such lot.
- 1.15 Vendor confirms that the carboys after it is received at GNFC shall be tested in accordance with IS-6312 specifications and standard fixed by GNFC. GNFC reserve its right to inspect the carboys at any time in vendor's factory and / or can appoint any external agency for inspection of carboys, if required. However, test results of GNFC on receipt of carboys at site shall be treated as final and binding upon Vendor.
- 1.16 The fitting of the caps MUST be PERFECT.
- 1.17 The Surface of the Handle of the carboys MUST be SMOOTH.