



# Understanding UN IBCs

What the UN mark establishes - and what still must be verified

## THE CLEAN TANK STANDARD

Never treat a UN symbol as a complete product recommendation. Read the design type, performance level, manufacture information and periodic marks, then qualify the customer's material and use.

### 01 The four layers of a compliant sale

| LAYER                   | QUESTION THE SALESPERSON MUST ANSWER                                                   |
|-------------------------|----------------------------------------------------------------------------------------|
| Authorized use          | Is an IBC authorized for the exact material, packing group and mode of transportation? |
| Design type             | What design type and performance level was originally qualified and marked?            |
| Continued qualification | Are required tests, inspections, condition and markings current?                       |
| Actual use              | Will the customer fill, close, secure and use the IBC within its limits?               |

### 02 Composite IBC anatomy

A common liquid composite IBC is a rigid plastic inner receptacle protected by structural outer equipment, often a steel cage and pallet. The inner receptacle and outer assembly function as one packaging design type; parts are not automatically interchangeable.

- The plastic bottle provides containment only as part of the qualified composite assembly.
- The outer packaging protects the bottle and bears the stacking load.
- Valve, closures, gaskets, pallet and cage must remain consistent with the design type and intended use.



**03** **Decode 31HA1 and the performance letter**

| ELEMENT | MEANING                        | SALES IMPLICATION                                                                          |
|---------|--------------------------------|--------------------------------------------------------------------------------------------|
| 31      | IBC for liquids                | The code identifies the broad type of contents, not the exact authorized chemical.         |
| H       | Plastic inner receptacle       | Compatibility, aging, permeability and physical condition still matter.                    |
| A       | Steel outer packaging          | Cage and pallet are structural parts of the composite design.                              |
| 1       | Rigid plastic inner receptacle | Bottle replacement must be evaluated as repair to the original design type.                |
| X       | PG I, II and III test level    | Does not override the prohibition on Packing Group I liquids in IBCs.                      |
| Y       | PG II and III test level       | Common level for many liquid applications; exact authorization still required.             |
| Z       | PG III test level              | Not suitable merely because the customer calls the material 'mild.' Verify classification. |

**04** **Read the rest of the primary mark**

- Month and year of manufacture.
- Country authorizing the mark and manufacturer or certifying symbol.
- Stacking test load and maximum permissible gross mass in kilograms.
- Additional plate data: rated capacity, tare mass, gauge test pressure, last leakproofness test and last inspection dates.

**IMPORTANT DISTINCTION**

The manufacture date belongs to the original design-type marking. Periodic test and inspection dates show continued qualification activity. A repair marking does not turn an older outer assembly into a newly manufactured IBC.



**05** **What the mark does not prove**

| THE MARK DOES NOT BY ITSELF PROVE        | WHAT TO DO INSTEAD                                                                                                            |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Authorization for a named chemical       | Confirm proper shipping name, UN/NA number, packing group, special provisions and packaging authorization.                    |
| Chemical compatibility                   | Obtain the exact product and escalate material, gasket and closure compatibility.                                             |
| Current physical condition               | Review the applicable periodic inspection and the customer's pre-fill visual inspection responsibility.                       |
| Correct closure                          | Use the manufacturer's closure instructions and specified components.                                                         |
| Cleanliness or prior-content suitability | Apply the correct Clean Tank product standard and customer cleanliness requirement.                                           |
| Maximum allowable specific gravity       | Do not infer a universal SG rating from the code alone; verify design information, gross mass, pressure and the exact lading. |

**06** **Approved sales language**

| AVOID                                    | USE                                                                                                                    |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 'It has a UN plate, so it is compliant.' | 'The mark identifies the qualified design type. We still verify current testing, condition and the intended material.' |
| 'X means it can carry anything.'         | 'X is a performance level; commodity rules, compatibility and IBC-specific restrictions still apply.'                  |
| 'This tote is rated for your chemical.'  | 'Let me verify the exact material and packaging authorization before I make that recommendation.'                      |

**ESCALATE**

Any request involving a specific chemical, Packing Group I, unusual specific gravity, elevated temperature, vapor pressure, venting, air transport or uncertainty about the original design type.



**Q**

## Knowledge check

1. Does a 31HA1/Y mark alone establish that the IBC is authorized for a customer's product?
2. What does the letter Y indicate?
3. Can an X-rated IBC be used for a Packing Group I liquid?
4. Name two items shown in the additional markings rather than the primary UN sequence.
5. What should the salesperson do when asked for a maximum specific gravity?

### ANSWER KEY

1. No; exact authorization, compatibility, condition and continued qualification still must be verified. | 2. The design type passed the Packing Group II and III performance level. | 3. No. 49 CFR 173.35(j) prohibits Packing Group I liquids in IBCs. | 4. Examples: last leakproofness test, last inspection, rated capacity, tare mass or gauge test pressure. | 5. Escalate and verify the design information and exact lading; do not infer it from the code alone.

**S**

## Regulatory basis and source links

The current Hazardous Materials Regulations control. These links were checked for this revision on September 17, 2026.

- [49 CFR 178.702 - IBC codes](#)
- [49 CFR 178.703 - Marking of IBCs](#)
- [49 CFR 178.707 - Standards for composite IBCs](#)
- [49 CFR 173.35 - Hazardous materials in IBCs](#)