

# Carbon Steel Tight Head Composite 55-Gallon Drum Specification

Press  to see Check List only.

| Description  | Package ID Number | Packaging Filling Instructions* |
|--|-------------------|---------------------------------|
| Drum, Carbon Steel, tight head composite, 55 gallon, 22 1/2 in. ID, with polyethylene insert, <b>UN 6HA 1/X 1.4/250</b> , 1.2141 mm Nominal (18 gauge) | 112-5885          | CHK-30                          |

**Mfg. Details Per: Packaging Specifications**  
**No. 6HA-110-00**  
**Issue Date: February 1, 2000**  
**Revised Date:**

|   |
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\* For future use.

Company  
Name Here

## Packaging Specifications

### Tight Head Carbon Steel Composite Drum

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## 1.0 GENERAL DESCRIPTION

Tight head (TH) Carbon Steel Composite ("overpack") drum with welded seams, 2 rolling hoops, steel body, steel head, conventional (with seams) construction, containing a polyethylene insert. 18 gauge steel, 55 gallon capacity.

### 1.1 United Nations Designation - UN 6HA1 /X sg/ tp/ \* [ per 49 CFR, ¶178.503]

- 6HA1 = Tight head steel composite drum with a plastic (PE) insert (receptacle).
- X = Suitable for Packing Group I, II, and III materials.
- 1.4 = Maximum specific gravity (density) for which drum design type was tested .
- 250 = Hydrostatic test pressure (in kilopascals) for which drum design type was tested.  
[ 250 kPa equivalent to 36.3 pounds per square in (psi) pressure – for PG I test.]
- \* = The last 2 digits of the calendar year in which the container was manufactured.

Specific UN Markings are specified in the Purchase Order Description for the referenced package ID number for each specific drum, which are the Company "minimum" UN requirements.

### 1.2 Size:

Inside diameter (in inches) [as specified above and in the Purchase Order Description for the referenced package ID number]

Drum dimensions to be in accordance with ANSI MH2-1997 (American National Standards Institute) Standards for Steel Drums and Pails.

## 2.0 MATERIAL DETAILS

Drum construction must comply with Title 49, Code of Federal Regulations (49 CFR), ¶178.504 (latest edition) for steel drums, and the following minimum requirements. Manufacturer shall document appropriate quality control on incoming raw material. No significant changes to the manufacturing process or raw material is allowed without prior approval of the Company.

### 2.1 Drum Body:

1.2141 mm Nominal cold rolled steel, 1.0871 mm Minimum(18 gauge). Reference [Appendix B](#).

### 2.2 Drum Head:

Cold rolled steel, as specified above for drum body.

### 2.3 Drum Bottom:

Cold rolled steel, as specified above for drum body.

### 2.4 Body Seams:

Welded (on-line, continuous welder).

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## 2.5 Chimes:

Mechanically seamed; bottom chime triple seamed, or double seamed, if double seam drum meets the UN test criteria, as specified.

## 2.6 Gasket:

N/A

## 2.7 Rolling Hoops:

Two (2) each separate rolling hoops formed into the drum body. Rolling hoops to be in accordance with ANSI MH2-1997 Standards.

## 2.8 Bung Closure:

Two (2) each 2 inch polyethylene bung closures; NPT threads.

*Manufacturer/supplier* must furnish the Company, in writing, closure requirements, as performed for the UN design test; per 49 CFR, ¶178.2(c)(1). It must be identified on the closure instructions specifically as to the Company drum to which the instructions apply. Ref: ¶9.0 for distribution.

## 2.9 Surface Preparation:

Surfaces shall be prepared to retard rust formation, or be sufficiently cleaned for application of interior and exterior coatings.

## 2.10 Interior:

Polyethylene insert container; minimum 40 mil for 55 gallon.

## 2.11 Exterior finish:

Body painted SSCI (Steel Shipping Container Institute) Black, with White head.

## 2.12 Seaming Compound:

Chimes must be sealed with a seaming compound, and applied in conformance to standard manufacturing quality procedures, to ensure no leakage/seepage.

## 2.13 Cleanliness:

Finished drums must be free of rust, dirt, oil, solvents, metal shavings, foreign contaminates, and interior moisture.

## 3.0 CONTAINER PERFORMANCE CRITERIA

Manufacturer shall successfully test and certify that containers meet or exceed the requirements of 49 CFR, ¶178.600 - 178.608, for the Packing Group I level.

### 3.1 Performance Test Documentation:

Upon request, the manufacturer must be capable of providing copies of the performance test documentation for purchased packagings, as required by 49 CFR ¶178.601(1) for the UN certification marked packaging. Periodic audit copies will be requested randomly on purchased UN packagings. Ref: ¶9.0.

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## 3.2 Performance Tests:

The specified drums require the **US Department of Transportation** UN performance criteria for design qualification testing, periodic retesting, and production tests established in 49 CFR, ¶178.600 - 178.608.

*NOTE TO SELLER: The UN test/marketing certifications must be made by the drum manufacturer or a Department of Transportation approved third party tester.*

## 4.0 QUALITY ASSURANCE

The Seller shall assure, and be responsible, that the quality of the drums furnished under this document are of good quality, as pursuant to industry standard manufacturing practices for steel drums, including the materials/components used in the manufacturing of the stated steel drums.

The Seller shall meet the requirements stipulated in this document, and the specific requirements of the Purchase Order Description for the specific drum as specified in the Purchase Order.

### 4.1 Manufacturer's Certification:

By the act of placing the UN performance criteria markings on each drum purchased, the manufacturer acknowledges he has certified, and accepted responsibility, that the stated drum design meets or exceeds the U.S. Department of Transportation's UN performance requirements as stipulated in ¶3.2 of this document and in accordance with the markings prescribed in 49 CFR, ¶178.503.

In addition, this certification marking also acknowledges that the drum manufacturer has complied with the specific standards for steel drums specifically listed in 49 CFR, ¶178.504.

### 4.2 Receiver Inspections:

The following inspections will be performed on the incoming drums by a Company designee to determine the drums meet quality standards and the requirements of this document. However, the Company is not limited to the following inspections to determine quality and specification conformance. Conformance will be indicated by a Y or N in the "Y/N" column, and negative responses documented and processed through the Company's Quality Assurance Program.

*NOTE: Checklist for this specification is on following page.*

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*This checklist is to be reproduced for QC Inspections.*

### Receiver Inspection Quality Control (QC) Checklist for Incoming Steel Composite Drums

| QC Conformance | Y/N                         | <i>&lt;&lt; "No's" to be documented in accordance with the Company's QA Program</i>  |
|----------------|-----------------------------|--|
| 1              | Capacity (¶1.0)             | Drum is the capacity specified in the Purchase Order Description.  |
| 2              | Drum Surface (¶2.9 and 4.0) | Clean, no significant scratching, dings or dents in drum, no significant corrosion, on exterior surface of drum.   |
| 3              | Bung Closures (¶2.8)        | Drum top contains two (2) each bung closures, 2 inch, polyethylene   |
|                |                             | Bung openings/closures are in good condition; none missing, and no defects noted in the plastic molding.   |
| 4              | Drum lids (¶2.11 and 4.0)   | Lids painted WHITE, and show no significant rusting/corrosion or dents.  |
| 5              | Drum exterior (¶2.11)       | Painted BLACK (SSCI standard)  |
| 6              | Markings (¶5.0)             | Drums marked (as a minimum) with Company specified UN markings, per Purchase Order Description.  |
|                |                             | Drums legibly marked (embossed) in accordance with required 49 CFR markings, and specified density and test pressure.  |
|                |                             | Markings include the manufacturer's identification -- company name or registered symbol (initials or M-number), or test agency code; after USA/.<br>Ref: 49 CFR, ¶178.503(a)(8). |
| 7              | Side Markings (¶5.0)        | The required UN markings are durable and legibly marked on the side,   |

Package ID number \_\_\_\_\_

P.O. Number \_\_\_\_\_

Total Units Received \_\_\_\_\_

Inspection Method: Per Company's QA Program.

Sample Size \_\_\_\_\_ [Based on ANSI/ASQ Z1.4-1993]

Non-Conformance Document No. \_\_\_\_\_

Inspector/Date \_\_\_\_\_

Additional comments provided on back: \_\_\_\_check if yes.

The above QC inspection check list shall be accomplished for each order based on random samples of incoming carbon steel drums by Quality Control personnel to determine manufacturer's conformance to these specified Packaging Specifications.

Shipments of carbon steel drums not meeting specified requirements will be returned to the seller for credit.

QC inspections resulting in non-compliance with the Packaging Specifications will be cause for rejection of the entire shipment.

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## 5.0 MARKING

As a minimum, each drum shall be marked in accordance with 49 CFR, ¶178.2, 178.3 and 178.503 in a conspicuous location on exterior surface of the drum. Markings shall have a minimum letter height of 1/2-inch. Markings must include the manufacturer's identification -- company name or registered symbol (initials or M-number), or test agency code, per 49 CFR, ¶178.503(a)(8).

*Additionally*, drums are to be marked with the specified UN markings as stipulated in ¶1.1 of this specification, and specifically stated in the Purchase Order Description.

The letters CATN—(dash) plus the last four (4) numbers of the package ID number must be marked below the UN markings:

55 gallon      CATN--5885

## 6.0 INTENDED USE

Containers are intended for Packing Group I, II, and III hazardous materials in liquid form. Maximum fill capacity of the drum shall not exceed the tested hydrostatic pressure or density marked on the drum.

## 7.0 SUGGESTED MANUFACTURERS

The following list of suggested manufacturers have demonstrated ability to comply to the requirements set forth in this document. However, this list does not guarantee current or continued availability as a suggested manufacturer source:

[Enter Suggested Manufacturer\(s\) Here:](#)

The Seller must advise the Company prior to any change in the current source (manufacturer) of packaging materials described in this Packaging Specification.

Any Manufacturer that satisfactorily demonstrates to the Company the capability to furnish packaging in compliance with this Packaging Specification, may be added to the above listing.

## 8.0 AUTHORIZED CHANGES

Changes/revisions in the requirements specified in this document will only be authorized by the Company.

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### 9.0 DISTRIBUTION OF UN PERFORMANCE TEST REPORTS (per ¶3.1) and CLOSURE INSTRUCTIONS (per ¶2.8)

A) Closure instructions must be furnished for each initial order, and annually (at the minimum) for each type/size package purchased by the Company to the address below.

B) Upon specific request, UN performance test documentation for each specified order/shipment will be submitted directly to the Company at the address below.

**COMPANY NAME AND ADDRESS** (enter information below)

# STEEL GAUGE TOLERANCES FOR STEEL DRUM QC EVALUATION

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## STANDARD FOR QC INSPECTIONS OF GAUGE THICKNESS FOR PURCHASED STEEL DRUMS

The below table of metal gauge thickness dimensions, and tolerances is to be used when evaluating steel drums for compliance to the specified steel thickness (gauge) set forth in the DOE Packaging Specifications for the purchase of steel drums.

This table is furnished, in that, the US DOT Hazardous Material Regulations (49 CFR) under the new UN Performance Packaging concept no longer specifies gauge thickness and tolerances for steel drums - only test criteria.

However, in the DOE UN Hazardous Material Packaging Specifications, specifies specific steel thickness (gauges) for the UN steel drums to be purchased, as well as the required UN performance criteria. In addition, the past DOT gauge table is incorporated directly into the DOE "White Book" for the DOT 7A, Type A packaging.

| GAUGE NUMBER | NOMINAL THICKNESS (Inches) | NOMINAL THICKNESS (Millimeters) | MINIMUM THICKNESS (Inches ) | MINIMUM THICKNESS (Millimeters) |
|--------------|----------------------------|---------------------------------|-----------------------------|---------------------------------|
| 12           | 0.1046                     | 2.6568                          | 0.0946                      | 2.4028                          |
| 14           | 0.0747                     | 1.8974                          | 0.0677                      | 1.7196                          |
| 16           | 0.0598                     | 1.5189                          | 0.0533                      | 1.3538                          |
| 18           | 0.0478                     | 1.2141                          | 0.0428                      | 1.0871                          |
| 19           | 0.0418                     | 1.0617                          | 0.0378                      | 0.9601                          |
| 20           | 0.0359                     | 0.9119                          | 0.0324                      | 0.8230                          |
| 22           | 0.0299                     | 0.7595                          | 0.0269                      | 0.6833                          |
| 24           | 0.0239                     | 0.6071                          | 0.0209                      | 0.5309                          |
| 26           | 0.0179                     | 0.4547                          | 0.0159                      | 0.4039                          |
| 28           | 0.0149                     | 0.3785                          | 0.0129                      | 0.3277                          |

### NOTES:

The above table of gauge values (in inches) were extracted from the past DOT specifications; 49 CFR, ¶173.24(a)(2) (pre-HM 181) for steel sheets; for the gauges as specified for DOT 17C, 17E, 17H, 37A, etc. steel drums.

Conversion to millimeters is: inches multiplied by 25.4000 mm/in = millimeters. [current 49 CFR, ¶171.10 (c)(2)]

Minimum Thickness for Reuse (reconditioning) is 1.1 millimeters (therefore, above 19 gauge steel).