

Corrugated Box Combination Package

Press to see  Check List only.

Description	Stores Catalog Number	Plant
Combination Package; Mfg. Item ID No. 66340 , Corrugated RSC box for (1) each 32 oz. bottle in inner metal can with corrugated board protective support + PE bag <i>without</i> bottles. UN 4GV/X 4/S , DOT E-9168	02-115-4375	ORNL

Mfg. Details Per: ORNL Packaging Specifications
No. 653-4GO-0004
Issue Date: November 15, 1994
Revised Date: May 1, 2001

-  [1.0 GENERAL DESCRIPTION](#)
-  [2.0 MATERIAL DETAILS](#)
-  [3.0 INNER PACKAGING \(CONTAINER AND CUSHING\) CRITERIA](#)
-  [4.0 CONTAINER PERFORMANCE CRITERIA](#)
-  [5.0 QUALITY ASSURANCE](#)
-  [6.0 MARKING](#)
-  [7.0 INTENDED USE](#)
-  [8.0 SUGGESTED MANUFACTURERS](#)
-  [9.0 AUTHORIZED CHANGES](#)
-  [10.0 DISTRIBUTION OF UN PERFORMANCE TEST REPORTS \(per ¶ 4.2\)](#)
-  [ATTACHMENT #1](#)

Oak Ridge National Laboratory (ORNL)

Packaging Specifications

Corrugated Box Combination Package

Specification No. 653-4GO-0004

Issued: November 15, 1994

Revised: May 1, 2001

Page 1 of 6

1.0 GENERAL DESCRIPTION

Combination Package; consisting of a Regular Slotted Carton (RSC), natural kraft corrugated fiberboard, double-wall construction, 275-lb test board, and with a metal can supported by corrugated die-cut protective cushioning. [DOT Exemption Package]

1.1 United Nations Designation - 4GV /X 4/ S * [per 49 CFR, &178.503]

- 4GV** = Fiberboard box [variation 2, 49CFR, &178.601(g)(2)]
- X** = Suitable for Packing Group I, II, and III materials
- 4** = Maximum allowable gross weight in kilograms for which the box was tested (4 kgs [8.8 lbs])
- S** = Designation indicates packaging is for a combination package [*or single packaging for solid materials*].
- *** = The last two (2) digits of the calendar year in which the container was manufactured.

1.2 Size:

Interior dimensions (LxWxH) -- 11-3/16 in. x 11-3/16 in. x 14-3/4 in.

Exterior dimensions (LxWxH) -- 11-1/4 in. x 11-1/4 in. x 15-7/8 in.

1.3 Tare Weight:

Five (5) lb (complete combination packaging without product)

2.0 MATERIAL DETAILS

Box construction must comply with Title 49, Code of Federal Regulations (49 CFR), &178.516 (latest edition) for fiberboard boxes, 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 Double-Wall Box:

Corrugated construction, RSC style, 275-lb test board.

2.2 Overall Construction:

42/26/26/26/42 lb per thousand square feet (MSF) basis weight.

2.3 Linerboard:

3-facings, 42/26/42 lb/MSF basis weight (110 lb minimum).

2.4 Corrugating Medium:

2-interleaved, 26/26 lb/MSF basis weight, B/C Flute.

2.5 Manufacturer's Joint:

Glued overlap tab joint.

Corrugated Box Combination Package

Specification No. 653-4GO-0004

Issued: November 15, 1994

Revised: May 1, 2001

Page 2 of 6

2.6 Water Resistance:

The outer surface must have a water absorption rate not greater than 155 g/m² when tested over a 30-minute period by the Cobb Method per UN requirements per 49 CFR, &178.516(b)(1)].

2.7 Closure:

Clear plastic tape, 2 in. x 18 in., furnished with combination packaging.

2.8 Interior:

Natural kraft.

2.9 Exterior:

Natural kraft.

2.10 Printing:

Black, Four Panels:

Side Panels --

- Up Arrows block (at top, left corner) on two (2) opposing panels
- UN 4GV/X 4/S* markings (at center)
- Accepted for Air Shipment
- Proper Shipping Name and UN ID block (at top)
- DOT E-9168 block (center)
- No Label Required
- IATA Use Instructions (bottom)

Top Panels --

- This Side Up
- Packing list, test closure and instructions information

Bottom Panel --

- Manufacturer's Box Certificate

2.11 Cleanliness:

Finished boxes shall be free of ragged edges, dirt, oil stains, or printing smears, and box must be dry.

2.12 Freight Classification:

In addition to the requirements contained in 49 CFR, double-wall boxes must conform to the applicable requirements of Rule 41, of the Uniform Freight Classification (UFC), and Rule 222 of the National Motor Freight Classification (NMFC), and so marked on box.

3.0 INNER PACKAGING [CONTAINER AND CUSHIONING] CRITERIA

3.1 Inner Can Support:

Corrugated board, double-wall, support insert, with die-cut corners, 5 in. x 2 in., 275-lb test board, B/C flute, Size: 7 in. x 7 in. x 14-5/8 in. with 1-7/8 in. top and bottom flaps.

3.2 Bag and Bag Closure:

Bag - Polyethylene bag; 30 in. x 13 in. (L x W), 4 mil, heat-sealed bottom.
Bag Closure - Polyethylene bag to be tied within itself.

3.3 Metal Can and Can Closure (pressure tested for air shipments):

Can - Full friction can, welded side seam, .025 ETP, double-seamed compound-lined, with metal top, silver metal color; size - 608 x 1014, pressure tested.

Can Closure Seal - Plastic overcap.

Corrugated Box Combination Package

Specification No. 653-4GO-0004

Issued: November 15, 1994

Revised: May 1, 2001

Page 3 of 6

3.4 Can Cushioning:

Top and bottom vermiculite pillows, one (1) each, 6-3/4 in. x 6-1/2 in.

4.0 CONTAINER PERFORMANCE CRITERIA

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

4.1 Packaging Compliance:

The packaging must comply with the terms of **DOT Exemption No. 9168**, as marked on the outer package. A copy of the current (renewed) exemption must be furnished with the packaging.

4.2 Performance Test Documentation:

Upon request, the manufacturer must be capable of providing ORNL copies of the performance test documentation for purchased packagings as required by 49 CFR for the UN certification marked packaging. Periodic audit copies will be requested randomly on UN packagings. Ref. [&10.0](#)

4.3 IATA Requirements:

In addition to meeting the requirements of 49 CFR, this UN Combination Packaging must also meet the requirements of current IATA regulations for carriage by air.

5.0 QUALITY ASSURANCE

The Seller shall assure, and be responsible, that the quality of the packaging furnished under this document is of good quality as pursuant to industry standard manufacturing practices for all components of this combination package, including the materials/components used in the manufacturing of the stated boxes and the individual components constituting the complete combination package, as sold.

The Seller shall meet the requirements stipulated in this packaging specification.

5.1 Manufacturer's Certification:

By the act of placing the UN performance criteria markings on each box of the combination package purchased by ORNL, the seller acknowledges he has certified and accepted responsibility that the stated box design and combination package meets or exceeds the U.S. Department of Transportation's UN performance requirements as required by 49 CFR, &178.600 - 178.608.

In addition, this certification marking acknowledges to ORNL that the box manufacturer has complied with the specific standards for fiberboard boxes specifically listed in 49 CFR, &178.516, including the Cobb Water Absorption Test specifically referenced under 49 CFR, & 178.516(b)(1).

5.2 Receiver Inspections:

The following inspections will be performed on incoming combination packages by the receiver to determine the combination packages meet quality standards and the requirements of this document. However, the receiver 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 on the Nonconformance Report (NCR), *UCN 11457*, (items 3 -21b), attached to the checklist, and submitted to ORNL's Packaging Operations (PkgOps) for action.

Note: Checklist for this specification is on following page.

Corrugated Box Combination Package

Specification No. 653-4GO-0004

Issued: November 15, 1994

Revised: May 1, 2001

Page 4 of 6

This checklist is to be reproduced for QC Inspections.

Receiver Inspection Quality Control (QC) Checklist for Incoming Corrugated Box Combination Packagings

QC Conformance	Y/N	<i><<No's to be documented on form UCN-11457 with checklist</i>
1	Package Condition	Packaging is in unimpaired physical condition, except for superficial marks, including all inner packagings.
2	Box Construction	Scoring uniform and sufficient depth to allow clean fold and without distortion or breaks.
		Corrugating medium not crushed within assembled box.
		When folded along score lines, flaps meet and are square - no space between flaps greater than 1/16 in.
3	Manufacturer's Joint	Glue tab joints securely glued, in alignment with box sidewalls, and no loose edges. No breaking of linerboard at tab joint fold.
4	Box Alignment	Assembled box and top are square at corners/edges.
5	Markings	Boxes marked (as a minimum) with ORNL specified UN markings, per Catalog Description.
		Markings include the manufacturer's identification -- company name or registered symbol (initials or M-number), or test agency code; after USA/. Ref: 49 CFR, &178.503(a)(8).
6	Box Printing	Printing on the box is of the specified size, is sharp, and has no smears. Information is according to specifications set forth in &2.10 of this document.
		Required packing/closure instructions are printed on the top box flap.
7	Packaging Components	All required combination packaging components, as specified in this document, are furnished with the specified corrugated box: <ul style="list-style-type: none"> <input type="checkbox"/> 4-mil polyethylene bag <input type="checkbox"/> Inner corrugated board support partition - 1 piece <input type="checkbox"/> Metal can and lid, pressure tested, with ring lock <input type="checkbox"/> Vermiculite pads, 2 each <input type="checkbox"/> Closure tape for box, and can lid <input type="checkbox"/> Copy of "current" DOE Exemption No. 9168

Catalog Number _____

P.O. Number _____

Total Units Received _____

Inspection Method: Per ORNL PkgOps QC Inspection Plan

Sample Size _____ [Based on ANSI/ASQC Z1.4-1993]

NCR No. _____

Inspector/Date _____

Additional comments provided on back: _____ check if yes

The above QC checklist shall be accomplished for each order based on random samples of incoming packaging by QC personnel to determine manufacturer's conformance to these specified Packaging Specifications.

Shipments of packaging not meeting specified requirements will be returned to the seller for credit.

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

Corrugated Box Combination Package

Specification No. 653-4GO-0004

Issued: November 15, 1994

Revised: May 1, 2001

Page 5 of 6

6.0 MARKING

As a minimum, each double-wall box of the combination package shall be marked in accordance with 49 CFR, &178.2 and 178.503, on the exterior surface of the box. Markings shall have a minimum letter height of 1/2 inch.

The markings shall be printed on the box panels as stated in [&2.10](#) of this document.

The manufacturer's compliance markings shall be printed on the box as stated in [&2.12](#).

7.0 INTENDED USE

The Combination Packages are intended for Packing Groups I, II, and III hazardous materials in liquid form. Maximum capacity of the container shall not exceed the tested gross weight, as marked on the box sidewall, that of 4 kilograms (8.8 lbs).

8.0 SUGGESTED MANUFACTURERS

The following list of suggested sellers 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 source:

- All-Pak, Inc., Pittsburgh, Pennsylvania [Mfg. Item ID: No. 66340, with pressure tested can.]
See [Attachment #1](#)

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

Any Seller or Manufacturer that satisfactorily demonstrates to the Company the capability to furnish packaging in compliance with this Requirements Document may be added to the above listing.

9.0 AUTHORIZED CHANGES

Changes/revisions in the requirements specified in this document will only be authorized by ORNL PkgOps as coordinated with Oak Ridge facilities Packaging Operations.

10.0 DISTRIBUTION OF UN PERFORMANCE TEST REPORTS (per [&4.2](#))

Upon specific request, UN performance test documentation for specified order/shipment will be submitted directly to the Packaging Operations Manager at the address below:

**Oak Ridge National Laboratory
Packaging Operations Manager
Bldg 7001, MS 6288
P. O. Box 2008, 1 Bethel Valley Road
Oak Ridge, Tennessee 37831-6288**

Corrugated Box Combination Package

Specification No. 653-4GO-0004

Issued: November 15, 1994

Revised: May 1, 2001

Page 6 of 6

ATTACHMENT #1

Catalog #
66340

DOT-E 9168 Exemption Package

4GV Package

with Tall Paint Can and
Pouch

Package Contents

Item#	Item Descriptions
96WO	Carton: 11 3/16" x 11 3/16" x 14 3/4" 275# Double Wall 4GV/X 4/SYr USA/AA1391/APSS
9601	Insert: 6 1/16" x 6 1/16" x 14 3/4" 275# Double Wall
	Bottle is not provided in this package. Shipper must ensure that the bottle used in this package complies with design type.
	Closure is not provided in this package. Shipper must ensure that the closure used in this package complies with design type.
1085	810 x 1012 (6 5/8" x 10 3/4") Multi Friction Can & Lid
1082P	Plastic Overcap for Paint Can
9604*	1" x 10" Pressure Sensitive Tape for Bottle neck
96900	Fiber Core for bottle neck
81186	PP Pouch
8133E*	Bag Tie
8110	13" x 30" 4 Mil PE Open End Bag
81330*	Bag Tie
9605K*	2" x 18" Pressure Sensitive Closing Tape
9311*, 9312*, 9310SM*	DOT Exemption Sheet & Instruction Sheets

*not shown

Transportation Mode: Acceptable for Ground Shipment

Note: This package is acceptable for Great Danger Hazardous Materials (gross mass not exceeding 4 kg), Packing Group I.

Warning: It is the responsibility of each person offering a hazardous material for transportation to ensure that such packaging is compatible with their loading. Failure to heed this warning could result in a serious incident.

Pallet Quantity: 60

