

TEST PROCEDURES and RESULTS

Preparation of Packagings for Testing
(U.N. Orange Book 9.7.3, HM - 181 178.602)

Each Inner receptacle was filled with: water

Total Gross Mass Weight = 5.6 lbs. / 2.5 kg
Tare Weight (packaging, including receptacles) = 3.4 lb.
Net " product " Weight (liquid or solid) = 2.2 lbs.

The fiberboard outer packaging was conditioned at 73^oF and 50 % Relative Humidity for 24 hours

Special preparation of plastic inside containers at 0^oF performed ? n/a

Drop Test (U.N. Orange Book 9.7.3 , HM - 181 178.603)

Number of drops **5** , Height of drops **72"**, **Packing Group I, Great Danger Level**

Test Results:

| | |
|-------------------------------|---------------|
| 1st drop , flat on bottom | PASSED |
| 2nd drop , flat on top | PASSED |
| 3rd drop , flat on long side | PASSED |
| 4th drop , flat on short side | PASSED |
| 5th drop , bottom corner | PASSED |

Comments: No leaks occurred from any inner receptacle
The outer fiberboard container did not exhibit any damage liable to affect safety during transit

Stacking Test (U.N. Orange Book 9.7.6, HM - 181 178.606)

(3 - empty) samples were subjected to a weight of **527 Lbs.** which is equal to or greater than identical packages of the same weight stacked to the height of 3 meters (9.84 feet) x 1.5 for dynamic compression testing.

Required top load: 475 lbs.

Actual top load applied: 527 lbs.

Test Results:

| | | | |
|------------|---------------|------|------------|
| Sample # 1 | PASSED | .2 " | Deflection |
| Sample # 2 | PASSED | .2 " | Deflection |
| Sample # 3 | PASSED | .2 " | Deflection |

Comments: No rupture , leaking , or deformation occurred

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TEST PROCEDURES and RESULTS

Cobb Test (U.N. Orange Book 9.6.11.1, HM -181 178.516)

Quantity of (5) 5" x 5" square samples from outside shipping container

Water absorbed

- 1) 131 **g/m²**
- 2) 133 **g/m²**
- 3) 131 **g/m²**
- 4) 134 **g/m²**
- 5) 133 **g/m²**

Mass increase cannot exceed 155 g/m² after a 30 minute testing period

Vibration Test (HM - 181 178.608)

(3) samples were tested for a **60 minute duration @ 200 Cycles Per Minute** Frequency
Mechanical Rotary Motion with a 1 " peak to peak Amplitude

Comments : Container and contents were not affected by the vibrations , no leakage of contents

TESTING EQUIPMENT used during the Performance Testing

Gaynes-Vibration tester # 1250

Gaynes-Drop tester # DT-125

Testing Machines Inc. Compression tester # 17-37 with a 50,000 lbs. Capacity

Testing Machines Inc. Cobb tester

GBC Temperature and Humidity Chamber

A&D Electronic Balance # EK-120 A

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