

## DOT / UN PACKAGING CERTIFICATION PERIODIC RETEST

**PACKAGE DESCRIPTION:** MX 275 Gallon HDPE IBC with Steel Pallet and 6" Fill  
Port Cap, Schuetz part # 4025659  
MX275 UN Nat/6"R TP Buttress  
Bfly 50 00 NPS 3PCA/Steel frame, 2-Plt XL:XL

Schuetz Container Systems certifies that this package has passed all required of the Department of Transportation 49 CFR performance oriented packaging section 178. This package also meets the criteria for IMDG, ICAO, IATA and the UN recommendations on transport of Dangerous Goods. It is the responsibility of the end user to determine authorization for use under these regulations. The use of packaging methods or components other than those in this document may invalidate this report.

### Summary of performance tests:

UN/DOT TEST	CFR REFERENCE	TEST LEVEL	TEST CONTENTS	TEST DATE	TEST RESULTS
Drop	178.810	1.9 m	Water Glycol	April 18, 2025	PASS
Bottom Lift	178.811	2580 Kg	Water	April 18, 2025	
Leakproofness	178.813	20 kPa – 10 minutes	Empty	April 18, 2025	PASS
Hydrostatic	178.814	100 kPa – 10 Minutes	Water	April 18, 2025	
Stacking	178.815	4000 Kg – 24 Hours	Empty	April 18, 2025	PASS
Vibration	178.819	3.2 Hz – 1 Hour	Water	April 18, 2025	PASS

UN Marking UN 31HA1 / Y / \*\* / USA / M4128  
( CFR 48 – 178.503 ) 3855 / 2031  
Package Code 31HA1 – composite IBC ( 178.707 )  
( CFR 49 178.707 )  
Performance standard Y ( meets packaging group II and III )  
Maximum product specific gravity 1.9  
Internal pressure test 100 kPa ( 173.24b )  
State authorizing the mark USA  
Package design qualification M4128  
Third party identification +AA6011 – original design qualification  
Periodic retest date April 18, 2026

No warranties, are expressed or implied. Any modifications to packaging as tested may void this certificate.

Signed Brian Minnich  
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Date – April 18, 2025

### **Test Sample Description**

Schuetz MX 275 Gallon HDPE IBC with Steel Pallet and 6" Fill Port Cap  
IBC Schuetz part # 4025659

See Quality test specification, bill of material and drawings for 4025659



### **Sample preparation**

MX 275 Gallon HDPE IBC with Steel Pallet and 6" Fill Port Cap with 2" buttress opening

Dip Tube information :

6999926657 "Entegris QC3 PE 4-port diptube"[ = Entegris QCIII DI3P4-95-52-000-00 dip tube]

Gasket on dip tube - McMaster-Car FEP-Encapsulated Silicone o-ring part# 9319K83

Dip tube torqued to 25 ft lbs using adapter 01-030940

Shipping cap torqued to 10 ft lbs using adapter 01-033961

Fill port cap torqued to 75 ft lbs.

Sample production date – April 17, 2018 1st shift

Overall package tare weight – 56.0 Kg (123.2 lbs) nominal

Net fill weight @ 98 % capacity - 1040 Kg ( 2288 lbs )

Package test weight – 1098 Kg ( 2422 lbs )

Package closing method - 6" Fill Port Cap 75 ft lbs

Dip tube torque to 25 ft lbs

Shipping cap torque to 10 ft lbs

Ambient temperature - 65 F

TEST	Sample ID number	Filling Substance	Conditioning
Drop	1	Glycol / water solution	- 18 C ( 0 F )
Bottom Lift	2	Water	Ambient
Leakproofness	2	Empty	Ambient
Hydrostatic Pressure	2	Water	Ambient
Stacking	2	Empty	Ambient
Vibration	2	Water	Ambient

### **Test Procedures and results – Drop Tests**

**Sample preparation and conditioning** - see sample preparation page

Drop height calculation – packaging group II materials.

**Drop Height** – 1.9 meters ( 74 “ )

**Drop Test Equipment** – Quick release hook with strap and 5 ton crane

**Regulatory reference** – CFR 49 178.810

**Criteria for passing** – A momentary leakage , which is slight and ceases immediately after impact with no further leakage is acceptable. There can be no damage to the package that would adversely affect safety during transport.

### **Test set up and results**

Sample #	Results	Comments
1	Pass	No leakage, deformed at impact area



### **Test Procedures and results – Bottom Lift Tests**

**Sample preparation and conditioning** - see sample preparation page

**Number of Lifts** – 8 (Four-Way Entry with 2 lifts per Direction of Entry)

**Fork Tine Penetration** – Entry 1 and 2: 36", Entry 3 and 4: 30"

**Regulatory reference** – CFR 49 178.811

**Bottom Lift Test Equipment** – Fork Lift, IBC filled with water

**Combined Gross Mass Lifted** – Fork

**Criteria for passing** – A momentary leakage , which is slight and ceases immediately after impact with no further leakage is acceptable. There can be no damage to the package that would adversely affect safety during transport.

Entry #1	Entry #2
	
Entry #3	Entry #4
	

### Test set up and results

Sample #	Lift #	Results	Comments
2	1	Pass	No leakage or damage.
2	2	Pass	No leakage or damage.
2	3	Pass	No leakage or damage.
2	4	Pass	No leakage or damage.
2	5	Pass	No leakage or damage.
2	6	Pass	No leakage or damage.
2	7	Pass	No leakage or damage.
2	8	Pass	No leakage or damage.

- typical test photo



**Test procedures and results – Leakproofness tests**

**Sample preparation and conditioning** – refer to sample preparation page

**Test Pressure** – 20 kPa ( 2.9 psi )

**Pressure test equipment** – Regulated air supply, pressure gauges on calibration system

**Area of pressurization** – threaded through the top of IBC

**Test duration** – 5 minutes

**Ambient Temperature** – 65 F

**Criteria for passing the test** – There can be no leakage of air from the packaging.

**Leakproofness test set up and results**

Sample #	Results	Comments
2	Pass	Maintained 20 kPa for 10 minutes – no leakage



**Test procedures and results –Hydrostatic pressure tests**

**Sample preparation and conditioning** – refer to sample preparation page

**Test Pressure** – 100 kPa ( 14.5 psi )

**Pressure test equipment** – Regulated air supply, pressure gauges on calibration system

**Area of pressurization** – threaded through the top head of drum

**Test duration** – 10 minutes

**Ambient Temperature** – 65 F

**Criteria for passing the test** – There can be no leakage from the packaging.

**Hydrostatic pressure test set up and results**

Sample #	Results	Comments
2	Pass	Maintained 100 kPa for 10 minutes – no leakage



## **Test procedures and results – Stacking**

**Sample preparation and conditioning** – refer to sample preparation page

**Test load applied** – 4000kg / 8800lbs

**Test equipment** – IBCs filled with water

**Ambient Temperature** – 68 F

**Criteria for passing the test** – No leaks may occur – there may be no permanent deformation which renders the whole IBC, including base pallet, unsafe for transport.

Sample #	Results	Test load applied	Test Duration
2	Pass	8000 lbs	24 hours



- typical test photo



**Test Procedures and results – Repetitive shock vibration tests**

**Sample preparation and conditioning** – see sample preparation page

**Table displacement** – 1”

**Vibration test equipment** – Schuetz Vibration table

**Test duration** – 1 hour

**Frequency** – 3.2 hz

**Criteria for passing the test** – There can be no rupture or leakage from the package and no deterioration that could adversely affect safety or package strength.

Vibration test set –up and results

Sample #	Results	Comments / observations
2	Pass	No leakage or damage

