

## **WATERWALL™**

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*Protection with the power of water*

MOBILE SECURITY CHECKPOINT  
CBR CONTAINMENT  
CARGO ISOLATION SYSTEM



# WATERWALL™ TECHNOLOGY

*Protection on tap*



## THE PHYSICS OF WATER

Water, having a relatively high mass, has often been used to mitigate against the effects of explosions. In sufficient quantity, it can dramatically reduce the damage caused by primary and secondary projectiles. As well as creating a barrier to control the force of the blast, the water interacts with the chemistry of the explosion, reducing heat and the overall effectiveness of the primary explosive material.

## HOW WATERWALL TECHNOLOGY IS USED

Normally, the uninflated unit is laid out away from the suspect device. It is then filled with air to give it structure and to facilitate positioning. The unit is filled with water, typically from a fire hydrant with an adaptor.



The water displaces the air through a pressure relief valve. The structure is now in place, providing enough shaped mass to protect against a potentially enormous explosion threat.



## EXTENSIVE TESTING

Trials using an improvised explosive device clearly demonstrate the blast mitigation effects of Waterwall technology. In tests of blast isolator products, pressure readings were reduced by up to 70 percent. As well, fragmentation was shown to be significantly reduced.



# WATERWALL™ PRODUCT RANGE

## MINI-HEX ISOLATOR



## ORDNANCE BLAST ISOLATOR



## VEHICLE IMPACT BARRIER



### CHARACTERISTICS

- Can be installed or deployed quickly as needed by first responders
  - Portable units designed for blast containment
- Made with either polyvinylchloride (PVC) or with neoprene coated, internally reinforced fabric

- Can be deployed quickly
- Creates a barrier of very high mass

### DEPLOYMENT LOCATIONS

- Airports
- Post-offices
- Security check-points
- Geopolitically sensitive areas
- Kept on hand by police, firefighters, private security firms

- Bomb squads
- Police departments
- Fire departments
- First responders

- Temporary traffic control
- Security check-points
- Border crossings
- Geopolitically sensitive areas
- VIP events

### SPECIFICATIONS

**SIZE**  
 height: 0.6m [2.0 ft]  
 width: 1.2m [3.1 ft]

**VOLUME**  
 empty: 0.13m<sup>3</sup> [4.6 cu ft]  
 full: 0.277m<sup>3</sup> [9.8 cu ft]

**WEIGHT**  
 empty: 10 kg [22 lbs]  
 full: 287 kg [633 pounds]

**SIZE**  
 height: 1.0m [3.3 ft]  
 width: 1.5m [4.9 ft]  
 length: 1.5m [4.9 ft]

**VOLUME**  
 empty: 0.16m<sup>3</sup> [5.6 cu ft]  
 full: 1.90m<sup>3</sup> [67 cu ft]

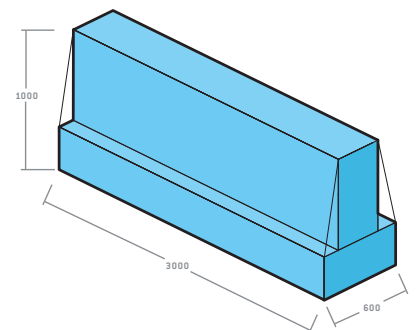
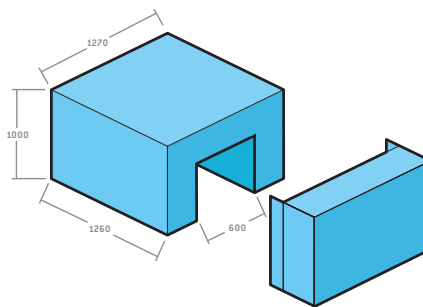
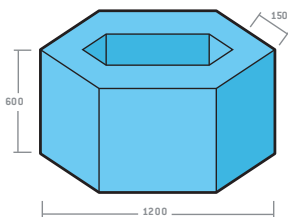
**WEIGHT**  
 empty: 20 kg [44 lbs]  
 full: 1230 kg [1.2 tons]  
 cover-full: 425 kg [937 lbs]

**SIZE**  
 height: 1m [3.4 ft]  
 width: 0.6m [2.0 ft]  
 length: 3.0m [9.9 ft]

**VOLUME**  
 empty: 0.2m<sup>3</sup> [7 cu ft]  
 full: 1.8m<sup>3</sup> [64 cu ft]

**WEIGHT**  
 empty: 19 kg [42 lbs]  
 full: 2570 kg [5,666 tons]

Specifications are approximate. Small variations can occur in manufacturing.



# WATERWALL™ PRODUCT RANGE

## BLAST ISOLATOR PANEL



### CHARACTERISTICS

- Provides complete coverage of a suspected vehicle
- Creates a barrier of very high mass
- Fluid interacts chemically with explosive to reduce energy of blast

### DEPLOYMENT LOCATIONS

- On board ships, above or below decks
- Military establishments
- Ports

### SPECIFICATIONS

#### SIZE

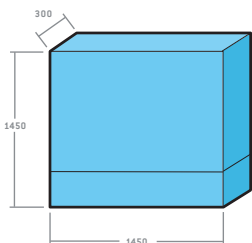
height: 1.2m [3' 11"]  
width: 335cm [13 inches]  
length: 1.5m [4.11 ft]

#### VOLUME

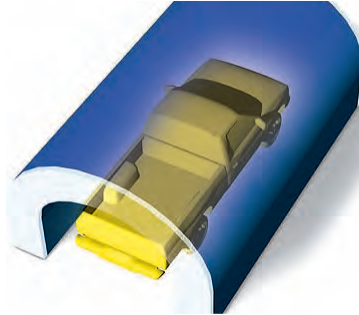
empty: 0.16m<sup>3</sup> [5.6 cu ft]  
full: 0.60m<sup>3</sup> [21.2 cu ft]

#### WEIGHT

empty: 3 kg [13 lbs]  
full: 600 kg [1310 pounds]



## VEHICLE ISOLATION SYSTEM



- Provides complete coverage of a suspected vehicle
- Creates a barrier of very high mass
- Fluid interacts chemically with explosive to reduce energy of blast

- Security check-points
- Border crossings
- Special events
- Mobile scanning

#### SIZE

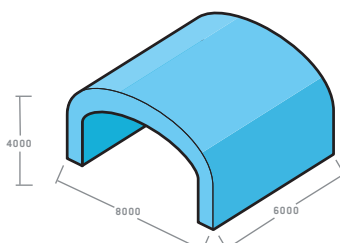
height: 4.0m [13.1 ft]  
width: 8.0m [26.2 ft]  
length: 6.0m [19.7 ft]

#### VOLUME

empty: 15m<sup>3</sup> [530 cu ft]  
full: 150m<sup>3</sup> [5,300 cu ft]

#### WEIGHT

empty: 350 kg [772 lbs]  
full: 24,550 kg [54,100 lbs]



## CARGO ISOLATOR SYSTEM



- Designed to fit on a PAG pallet
- Semi-permanent or installed as required
- Can be repositioned with mechanical handling when full.

- Airports
- Seaports
- Security check-points
- Border crossings
- Post-offices
- Courier depots

#### SIZE

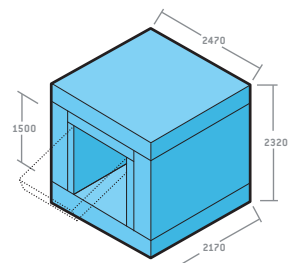
height: 2.3m [7.5 ft]  
width: 2.5m [8.1 ft]  
length: 2.2m [7.2 ft]

#### VOLUME

empty: 1.2m<sup>3</sup> [42 cu ft]  
full: 12.4m<sup>3</sup> [440 cu ft]

#### WEIGHT

empty: 82 kg [180 lbs]  
full: 7,500 kg [16,500 tons]

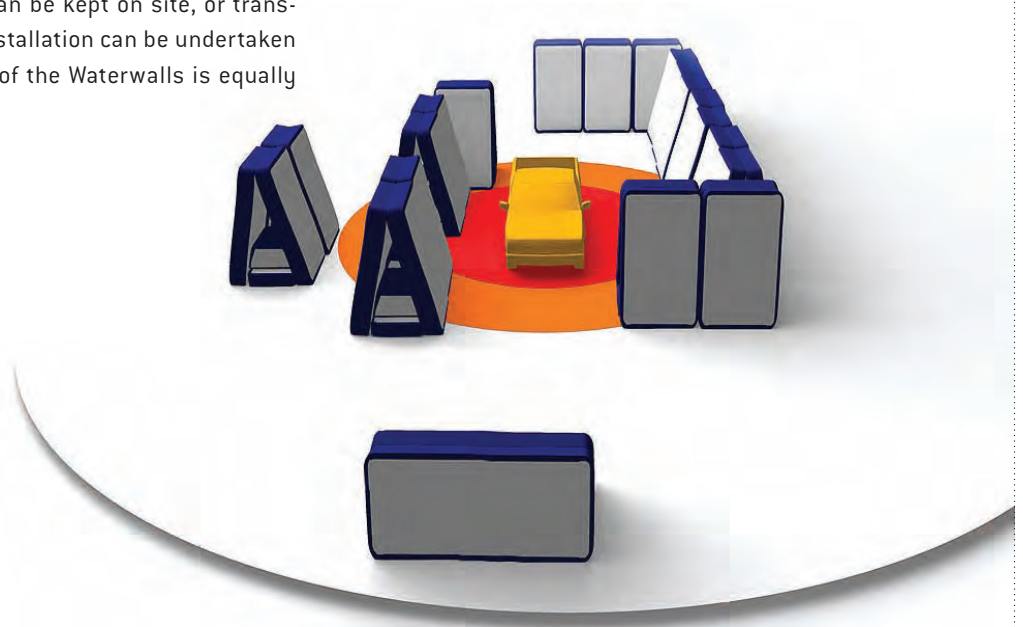


Specifications are approximate. Small variations can occur in manufacturing.

# MOBILE SECURITY CHECKPOINT

The traditional method involves transporting large concrete blocks to the site. This requires a ready supplier within a reasonable proximity, installation equipment, and a significant cost for shipping materials to and from the site.

The Cintec Waterwall system can be kept on site, or transported at a fraction of the cost. Installation can be undertaken by a single person. Disassembly of the Waterwalls is equally simple and cost-effective.



THE FORMS OF WATERWALL TECHNOLOGY				
<p><b>WATERWALL ISOLATION SYSTEM</b></p> 	<p><b>CARGO ISOLATION SYSTEM</b></p> 	<p><b>MINI-HEX ISOLATOR</b></p> 	<p><b>VEHICLE IMPACT BARRIER</b></p> 	<p><b>VEHICLE ISOLATION SYSTEM</b></p> 
<b>CHARACTERISTICS</b>				
<ul style="list-style-type: none"> <li>• Semi-permanent or inflated as required</li> <li>• Can be quickly deployed</li> </ul>	<ul style="list-style-type: none"> <li>• Designed to fit on a PAG pallet</li> <li>• Semi-permanent or inflated as required</li> <li>• Can be repositioned with mechanical handling when full</li> </ul>	<ul style="list-style-type: none"> <li>• Portable units designed for blast containment</li> <li>• Can be deployed quickly by first responders</li> </ul>	<ul style="list-style-type: none"> <li>• Can be deployed quickly</li> <li>• Creates a barrier of high mass</li> </ul>	<ul style="list-style-type: none"> <li>• Provides complete coverage of a suspected vehicle</li> <li>• Fluid interacts chemically with explosive to reduce energy of blast</li> <li>• Semi-permanent or inflated as required</li> </ul>
<b>DEPLOYMENT LOCATIONS</b>				
<ul style="list-style-type: none"> <li>• Mobile security checkpoints</li> <li>• Border crossings</li> <li>• Geopolitically sensitive areas</li> <li>• VIP events</li> </ul>	<ul style="list-style-type: none"> <li>• Airports</li> <li>• Border crossings</li> <li>• Post-offices</li> <li>• Security checkpoints</li> </ul>	<ul style="list-style-type: none"> <li>• Airports</li> <li>• Border crossings</li> <li>• Post-offices</li> <li>• Security checkpoints</li> </ul>	<ul style="list-style-type: none"> <li>• Security checkpoints</li> <li>• Border crossings</li> <li>• Geopolitically sensitive areas</li> <li>• VIP events</li> </ul>	<ul style="list-style-type: none"> <li>• Security checkpoints</li> <li>• Border crossings</li> </ul>

# CBR CONTAINMENT

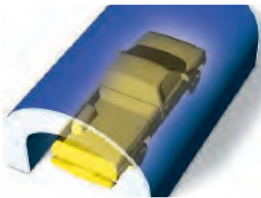
## *Chemical, Biological, Radiological*

### CBR HAZARD

The containment of a device that may have a CBR content is essential. If the device explodes and if the meteorological conditions are right then the hazard can travel a considerable distance downwind. Containing an area also includes establishing perimeters and zones of operation.

#### CBR CONTAINERS

VEHICLE ISOLATION SYSTEM



CARGO ISOLATION SYSTEM



ORDNANCE BLAST ISOLATOR



MINI-HEX ISOLATOR



BLAST ISOLATOR PANEL



### CONTAINMENT

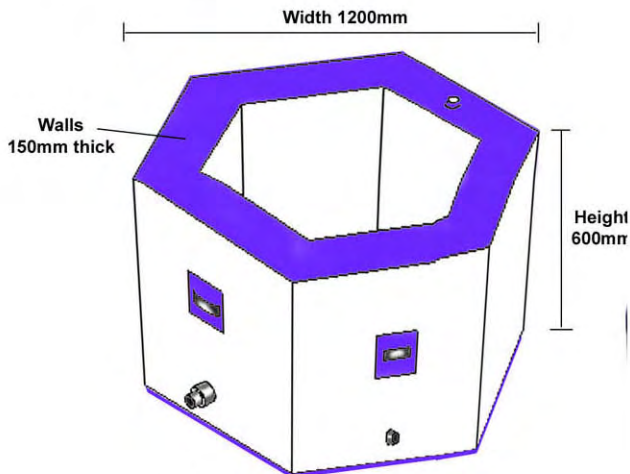
The isolator bins and the Vehicle Isolation System will contain the majority of CBR devices. WaterWall products protect against a wide range of explosion threats – from an IED containing 20 kg of explosive to a vehicle carrying 250 kg.

However, the explosive content for a CBR device is not necessarily relative to the quantity of agent inside. The explosive may destroy the majority of a chemical, biological agent or toxic industrial material. If a radiation dispersion device (RDD) is suspected, then the products can be used just filled with water. For chemical and biological devices a reagent can be added to the water which will reduce the effect of any agent released by the blast.

# The Mini-Hex Bin

The Mini-Hex Bin is designed to isolate the possible danger to both people and property following the discovery of a suspicious object. It is ideally suited to environments where such objects might most often be found; postal sorting offices, transportation centres and shopping malls and commercial premises. Upon discovery of such an object, the Mini-Hex Bin is placed over the object and then quickly inflated with water through a fire-hose; the water displaces the air through a pressure relief valve. When inflated, the suspicious object can be dealt with by the bomb squad. In the event of the object being dealt with by non explosive methods, the water can be pumped out and the Mini-Hex deflated.

It is designed to be used both by first responders to an emergency situation or pre-deployed in anticipation of suspect objects being found such as next to an x-ray security check. It packs small for easy storage and yet deploys rapidly when necessary. Various sizes are available to suit differing requirements.



## SPECIFICATIONS:

### SIZE

height: 600mm  
width: 1200mm

### VOLUME

empty: 0.13m<sup>3</sup>  
full: 277 litres

### WEIGHT

empty: 10kg  
full: 287kg



The relatively high mass of water means it is highly effective in reducing the impact of an explosion, either accidental or deliberate. Following an explosion, the blast interacts with the Mini-Hex Bin creating an air-water aerosol barrier that substantially reduces the pressures behind the blast wave, heat is absorbed and fragmentation is either eliminated or significantly decreased. With water supplies readily available in buildings or from fire hydrants it is relatively simple to inflate the Mini-Hex where and when necessary.

# Maxi Hex Isolator (MXI 330)

## Maxi Hex Isolator (MXI 330) Data Sheet

Constructed from engineered waterproof PVC, the MXI can be inflated on location from a local water source, the suspect package is isolated and enclosed from all sides with the top and bottom left open for access to and inspection of the object, as well as to vent the blast.

If there is a detonation of the explosive material, the interaction of the blast with the Waterwall barrier creates an air-water aerosol that substantially reduces the pressures associated with the blast wave. Heat is absorbed, reducing the effectiveness of many of the oxygen-deficient explosives used by terrorists today. Fragmentation is either eliminated or is significantly decreased.

### Size:

Height 1.0m (3.3 ft) Width 1.2m (3.1 ft)

### Volume:

Empty - 0.13m<sup>3</sup> (4.6 cu ft)

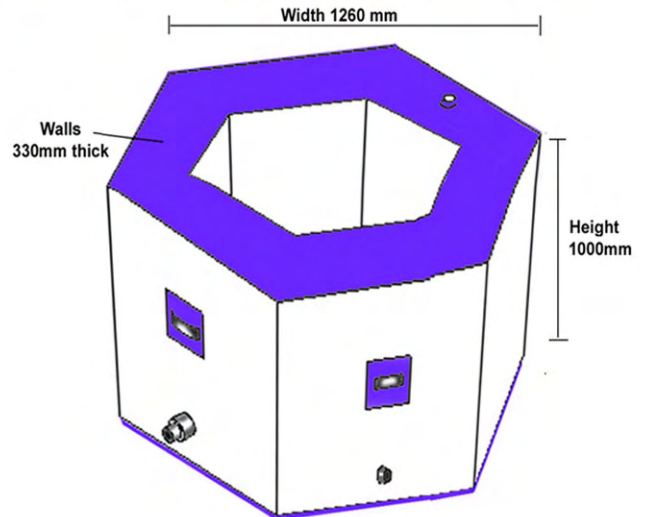
Full (inc containment area) - 1.25m<sup>3</sup> (44 cu ft)

### Weight:

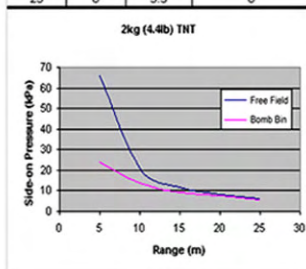
Empty - 20kg (44lbs) Full - 987kg (2176 lbs)

### Water Usage:

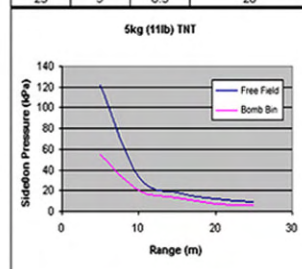
967 litres (213 gallons)



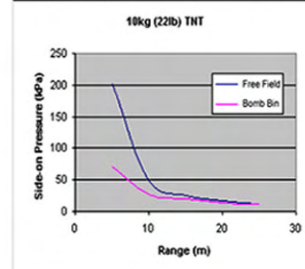
Cintec Bomb Bin Test				
2kg (4.4 lb) TNT				
Peak Incident Pressure (kPa)				
Range (m)	Free Field	Bomb Bin	Reduction (%)	
5	66	24	64	
10	21	14	33	
15	12	9	25	
20	8	7.5	6	
25	6	5.5	8	



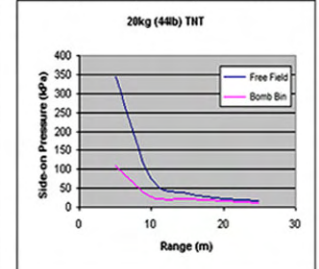
Cintec Bomb Bin Test				
5kg (11 lb) TNT				
Peak Incident Pressure (kPa)				
Range (m)	Free Field	Bomb Bin	Reduction (%)	
5	122	55	55	
10	33	20	39	
15	18	13	28	
20	12	7	42	
25	9	6.5	28	



Cintec Bomb Bin Test				
10kg (22lb) TNT				
Peak Incident Pressure (kPa)				
Range (m)	Free Field	Bomb Bin	Reduction (%)	
5	202	70	65	
10	49	27	45	
15	25	20	20	
20	16	13	19	
25	12	11	8	



Cintec Bomb Bin Test				
20kg (44lb) TNT				
Peak Incident Pressure (kPa)				
Range (m)	Free Field	Bomb Bin	Reduction (%)	
5	343	110	68	
10	76	28	63	
15	36	22	39	
20	23	17	26	
25	17	11	35	



# Ordnance Blast Isolator (EOD British Bomb Squad Model)



Designed specifically to the requirements of the British Bomb Squad, the OBI can be used for the disposal of unexploded military ordnance as well as improvised explosive devices. The design provides blast containment on all four sides as well as from above while the removable front panel allows access to the potential explosive device and if required, it can be repositioned prior to the use of a disruptor and controlled explosion.

## Size:

Height 1.0m (3.3ft) Width 1.27m (4.2ft)  
Length 1.59m (5.2ft)

## Volume:

Empty -  $0.175\text{m}^3$  (6.2 cu ft)  
Full (inc containment area)\* -  $2.0\text{m}^3$  (72 cu ft)

## Weight:

Empty - 30kg (66lbs) approx.  
Full - 1725kg (3800lbs) approx.

## Water Usage:

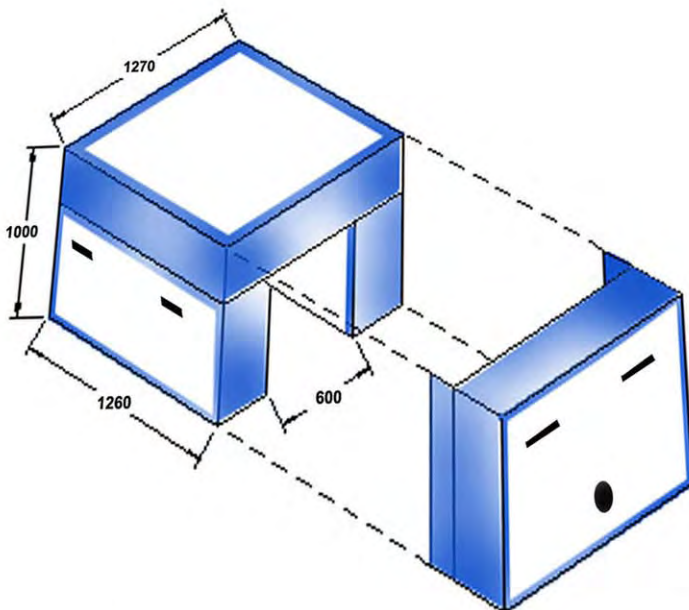
1695 litres (450 gallons)

## Blast Suppression:

1- 20 kg (2 - 44lbs) TNT NEQ\*  
With 99% fragment retention at 10kg  
(22lbs) TNT NEQ

\* Net explosive quantity

\* Containment area =  $0.33\text{m}^3$  (11.65 cu ft)



As supplied to 11 EOD Regiment R L C.

# CARGO ISOLATION SYSTEM (CIS)

## THE PHYSICS OF WATER

Water, having a relatively high mass, has often been used to mitigate against the effects of explosions. In sufficient quantity, it can dramatically reduce the damage caused by primary and secondary projectiles and interact with the chemistry of the explosion, reducing heat and the overall effectiveness of the primary explosive material.

Cintec has developed a range of water-filled components capable of protecting people and property against the effects of terrorist devices such as a car bombs as well as for the safe disposal of unexploded ordnance.

## THE CIS

Deployable for temporary or semi-permanent use, the Cargo Isolation System is suitable for a range of transport applications. Its dimensions are based on x-ray machine capacity, but it can be custom made to fit virtually any requirements. It is designed to mitigate against 20 kg (44 lbs) of TNT and is applicable in CBR scenarios.

## INSTALLATION PROCEDURE

Firstly, the uninflated unit is laid out on location. It is then filled with air to give it structure and to facilitate positioning. The unit is filled with water, typically from a fire hydrant with an adaptor. The water displaces the air through a pressure relief valve. The structure is now in place, providing enough shaped mass to protect against a potentially enormous explosion threat.



### CHARACTERISTICS

- Easily and rapidly deployed
- Custom made to clients' requirements
- Designed to fit on a PAG pallet
- Designed for 20 kg (44 lbs) TNT
- Water filled - readily available at low cost
- Applicable in CBR scenarios
- Can remain inflated in locations where suspect devices are expected

### CUSTOM-SIZED VERSION

- Smaller size available for logistic/ courier companies, based on capacity of X-RAY machine
- Designed for 2 kg (5 lbs) of explosive or to meet customers' requirements

### DEPLOYMENT LOCATIONS

- Airports
- Seaports
- Customs areas
- Courier depots
- Post offices
- Freight depots

### SPECIFICATIONS

#### SIZE

- height: 1.0m (4.25 ft)  
width: 1.5m (5.25 ft)  
length: 1.5m (4.9 ft)

#### VOLUME

- empty: 0.16m<sup>3</sup> (5.6 cu ft)  
full: 1.90m<sup>3</sup> (67 cu ft)

#### WEIGHT

- empty: 15 kg (33 lbs)  
full: 1544 kg (1.5 tons)

For more information please call:

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