

CryoSure[®] A revolution in -70°C cryogenic shipping

A cold chain revolution

Whereas most of the temperature-controlled pharmaceutical shipment solutions have historically involved temperature ranges of 2–8°C and 15–25°C, many pharma products and biospecimen samples require below -70°C shipments. More importantly, many new products within Cell & Gene Therapy, Clinical development, other non-finished products as well as mRNA vaccines have to be transported below -70°C. That's why Envirotainer now offers its customers the revolutionary CryoSure[®] platform, based on the Linde Seccurus[®] technology and Envirotainer's 35 years of experience, designed with today's and tomorrow's high demands in mind has unmatched performance, superior duration and is the most sustainable solution on the market.

Superior duration

The CryoSure[®] platform has an ISTA 7D summer validation for below -70°C for between 8 and 21 days – between 2–7 times better than any competing technology – making it the most secure solution on the market. And through a unique QR-code system it is easy to get an estimate of the remaining duration using only a mobile phone at any stage of the transport.

Unmatched performance

The CryoSure[®] platform maintains the temperature stable at below -70°C throughout the entire shipment period, unlike most traditional dry ice solutions where the temperature slowly increases for each passing day. Furthermore, unlike LN₂-solutions the temperature is not affected by the orientation of the product. In fact, the sample space maintains its temperature around or below -75°C even if it is opened.

Safest and easiest to handle

The CryoSure[®] platform is both easier and safer to handle than competing technologies as the system arrives pre-charged to the customer. No more need for assembly, no more having to source and handle



dry ice locally, no more pre-conditioning of boxes. Just open the box, take off the lid, load the pharma product, close up and ship.

Best value – most sustainable

The reusable CryoSure[®] platform is noticeably less bulky and has a 2 to 3 times better weight to volume efficiency compared to existing dry-ice boxes and LN₂. This translates into both significantly reduced transportation costs, as well as significantly reduced carbon emissions.

Unparalleled system support

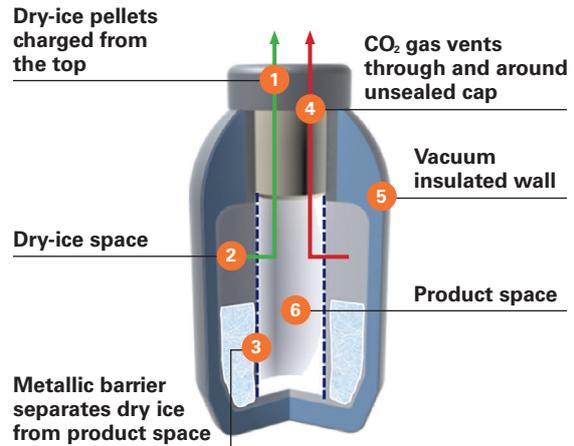
The CryoSure[®] platform is backed by Envirotainer's market leading system support. You can book your CryoSure[®] unit on Envirotainer's portal just 48 hours in advance. You can track your shipment with Envirotainer's Live monitoring platform. And when your shipment has arrived, you can simply return it to one of Envirotainer's 50+ service stations globally – or ask us to come and pick it up.

How it works

The CryoSure® flask is made from durable, high-grade aluminum and delivered inside a sturdy cardboard box filled with foam for additional protection and easier stacking. The product space, made from the same material as the exterior bottle, is chilled to below -70°C with dry-ice pellets/rice charged from the top. To ensure minimal heat transfer, the walls are vacuum insulated. The unique design is what makes it possible for the CryoSure® bottles to maintain the temperatures stable between 2–7 times longer than any competing technology.

A solution for every need

The CryoSure® platform offers four different products depending on the needs of the customer: The CryoSure® X1 (1.0L), the CryoSure® X2 (1.6L), the CryoSure® X5 (5.0L) and the CryoSure® X11 (11.1L).



CryoSure® Range



	CryoSure® X1		CryoSure® X2		CryoSure® X5		CryoSure® X11	
Product space opening (D)	9.0cm	3.5"	9.0cm	3.5"	15.2cm	6.0"	21.3x21.3cm	8.4x8.4"
Product space (DxH)	8.1x19.5cm	3.2x7.7"	8.1x31.9cm	3.2x12.6"	14.3x31.5cm	5.6x12.4"	20.7x33.2cm	8.1x13.1"
Product space volume	1.0L	33.7oz	1.6L	55.0oz	5.0L	170.3oz	11.1L	376.3oz
Outer box dimensions (L/WxH)	27.0x42.4cm	10.6x16.7"	29.6x58.9cm	11.7x23.2"	33.6x58.9cm	13.2x23.2"	45.6x64.2cm	18.0x25.3"
Weight fully charged	4.8kg	10.6lbs	9.8kg	21.5lbs	11.2kg	24.8lbs	17.5kg	38.6lbs
Dry-ice fully charged	1.2kg	2.5lbs	3.5kg	7.7lbs	3.2kg	7.2lbs	5.5kg	12.0lbs
Duration	>8 days		>21 days		>13 days		>15 days	

CryoSure® version	# of 2 mL vials	2 mL vial configuration
CryoSure® X1	20	Canister holding 2 bags, 10 vials/bag
CryoSure® X2	80	Canister holding 16 canes without sleeves, 5 vials/cane
	70	Canister holding 14 canes with sleeves, 5 vials/cane
CryoSure® X5	300	Canister holding 60 canes without sleeves, 5 vials/cane
	200	2 boxes oriented vertically; 100 vials/box
CryoSure® X11	600	120 canes without sleeves in bags; 5 vials/cane
	500	Rack holding 5 boxes; 100 vials/box