

## Members



**National Centre of Cold Chain Development** NCCD is an autonomous body established by the Government of India with an agenda to positively impact and promote the development of the cold-chain sector in the country.



**India Energy Storage Alliance.** IESA was launched in 2012 to help technology and system integration companies involved in energy storage and microgrids to understand and capture the opportunities in the growing markets.



**Clean Energy Access Network,** is an all India representative organization launched in 2014 with a clear mandate to support, unify and grow the decentralized clean energy sector in India.



**Reichs-Ausschuss für Lieferbedingungen (RAL),** Several active PCM enterprises formed the Quality Association PCM in 2004 to develop proper quality assurance procedures.

## Awards



**GITA- Global Innovation & Technology Alliance - 2022**



**FICCI- DST Lockheed Martin Award - 2015**



**WWF- Climate & Energy – 2021**



**TCL- Supply Chain Innovation Award for Pharmaceuticals - 2018**



**DST, GI- Department of Science & Technology, Government of India - 2020 & 2017**



**BIRAC- Sparsh Grant - 2022**



**UNIDO- FLCTD Innovation Challenge - 2018 & 2022**



**USAID FROM THE AMERICAN PEOPLE**



**MIT- Innovators under 35 India Award - 2016 & 2017**



Scan the QR code to visit our website



Representante en Latinoamérica  
mariaclaudia.ramirez@qasaysoluciones.com  
om www.qasaysoluciones.com

Version No.2, July 2022

# CREATING IMPACTFUL INNOVATIONS

Life Sciences and Healthcare



**PLUSS<sup>®</sup>**  
TECHNOLOGY FOR  
A BETTER WORLD

**PLUSS Advanced Technologies Pvt. Ltd.**  
B-205, Tower-B, Pioneer Urban Square, Sector-62,  
Gurugram-122101 (Haryana), India  
Telephone: +91-124-4309490-91-92 | Fax: +91-124-4824214  
E-mail: info@pluss.co.in

**PLUSS Advanced Technologies B.V.**  
Helftheuvelweg 11 - A2.12, 5222 AV  
's-Hertogenbosch, The Netherlands  
Website: www.PlussAT.eu

**PLUSS<sup>®</sup>** | TECHNOLOGY FOR  
A BETTER WORLD





## PLUSS<sup>®</sup> | TECHNOLOGY FOR A BETTER WORLD

Founded in 1994, Pluss Advanced Technologies started with R&D and manufacturing of specialized polymers. In 2007 Pluss commenced development in the field of Phase Change Materials (PCMs) technology. In 2012, the company raised equity funds from Tata Capital Innovations Funds and expanded R&D, developed and commercialized first of its kind temperature control solutions using proprietary materials, addressed unmet need of temperature control across refrigeration, cold storage, cold-chain logistics, HVAC, and healthcare sectors. The company today has a global presence with its own subsidiary in Netherlands. Pluss has received several awards and recognitions, including the CII Innovation award twice, in 2014 and 2017. It has also received the Massachusetts Institute of Technology's Innovators under 35 awards, in 2016 and 2017. Since 2021, Pluss is a subsidiary of Carborundum Universal Limited (CUMI), which is a Murugappa Group company.



## Pharma Logistics Temperature Controlled Packaging



### Saved more than 60 Mn vaccines from getting wasted

Celsure is a range of Phase Change Materials based pre-validated packaging for temperature-sensitive products such as vaccines, clinical samples, and other life-saving drugs or biologics. Celsure ensures that the vaccines that reach us, our families, and friends have travelled at safe temperatures even up to 120 hours and beyond.



## PLUSS<sup>TAINABLE</sup>

able to maintain the optimal rate or level to meet the needs of the present without compromising the needs of future generations, the **PLUSS way**.

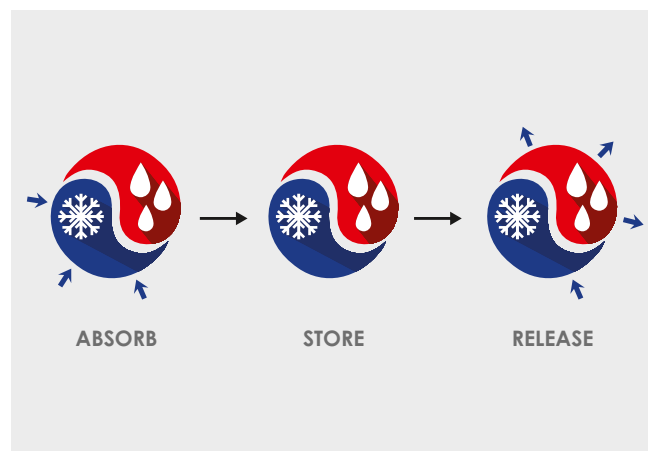
Sustainability drives all that we do. From the business that we are in, the ideas we generate, the products we develop to the processes we undertake. Our unwavering commitment to a sustainable way of living and working, drives us towards PLUSStainability at all times.



## Our Technology

### Using save<sup>®</sup> PCMs for thermal energy storage

Phase Change Materials (PCMs) use their phase-changing properties (solidify, liquify, evaporate, or condense) to absorb or release a large amount of energy at a specific and constant temperature. This energy, also known as latent energy, helps maintain the desired temperature for an extended period of time.



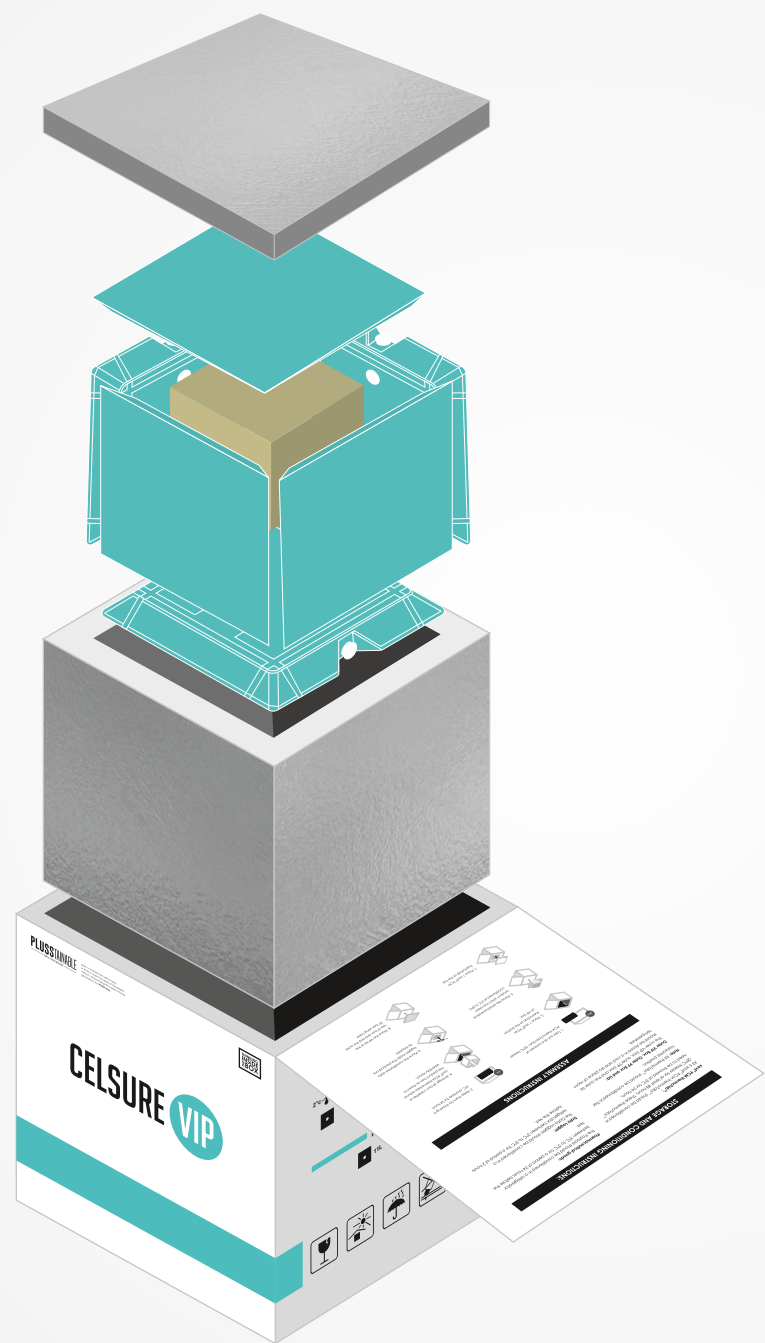
## What's best for you is best for us



# Pharma Logistics

## Temperature Controlled Packaging

Be Sure with Celsure®



### Key Features

- Temperature precision through saveE® PCM
- ISTA-7D validated
- Assembly time only 5 minutes
- Rental program available
- IOT enabled smart sensing available
- Patented design

**Disclaimer:** The above image is a representative for the design of the Celsure® VIP.



Parcel Shipper  
(Single use)



Parcel Shipper  
(Multi use)



Pallet Shipper



Last Mile  
Delivery Solution

# Pharma Logistics

## Temperature Controlled Packaging

### Parcel Shipper - Single Use



Thinking inside the box

### Celsure® – Retention up to 120 hours

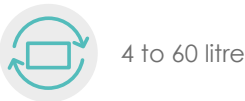
Model No.	Backup Hours (h)	Ext. Dims. (mm)	Payload Dims. (mm)	Payload Vol. (l)	Vol. Wt. (kg)	Tare Wt. (kg)
Temperature Range: 2 to 8°C & 15 to 25°C						
7L4D-08P/ 7L 4D-25P	96-120	500x500x460	230x230x130	7.0	19.2	15.4
14L4D-08P/ 14L4D-25P	96-120	535x535x510	300x300x155	14.0	24.3	21.7
28L4D-08P/ 28L4D-25P	96-120	570x570x600	335x335x250	28.0	32.5	25.7
Temperature Range: -25 to -15°C						
7L5D-25N	120	535x535x510	230x230x130	7.0	24.0	35.0
14L4D-25N	72-96	535x535x510	300x300x155	14.0	35.0	34.0
28L4D-25N	72-96	570x570x600	335x335x250	28.0	32.0	49.0
60L4D-25N	96	620x620x720	390x390x390	60.0	40.0	65.0
Temperature Range: -80 to -60°C (Dry Ice based)						
14L5D-DI	120	488x488x385	300x300x155	14.0	15.0	18.0
26L5D-DI	120	523x523x435	325x325x250	26.0	20.0	24.0
35L5D-DI	120	558x558x545	370x370x260	35.0	28.0	38.0

# Pharma Logistics

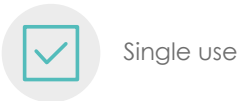
## Temperature Controlled Packaging

### Celsure® Express – Retention up to 72 hours

Model No.	Backup Hours (h)	Ext. Dims. (mm)	Payload Dims (mm)	Payload Vol. (l)	Vol. Wt. (kg)	Tare Wt. (kg)
Temperature Range: 2 to 8°C & 15 to 25 °C						
4L2D-08P/ 4L2D-25P	48-72	300×300×355	195×110×203	4.4	5.3	4.0
7L2D-08P/ 7L2D-25P	48-72	488×488×385	230×230×130	7.0	15.3	11.0
14L2D-08P/ 14L2D-25P	48-72	523×523×435	300×300×155	14.0	19.8	11.3
28L2D-08P/ 28L2D-25P	48-72	558×558×545	335×335×250	28.0	28.3	19.3
35L4D-25P	48-72	642×451×480	510×355×195	35.0	23.2	18.0
Temperature Range: -25 to -15°C						
3L1D25N	36	300×300×355	192×107×98	3.0	5.0	7.0
7L2D-25N	48-72	488×488×385	230×230×130	7.0	10.0	16.0
14L2D-25N	48-72	523×523×435	265×265×205	14.0	20.0	20.0
28L2D-25N	48-72	558×558×545	335×335×250	28.0	28.0	32.0



4 to 60 litre



Single use



Up to 120 hours

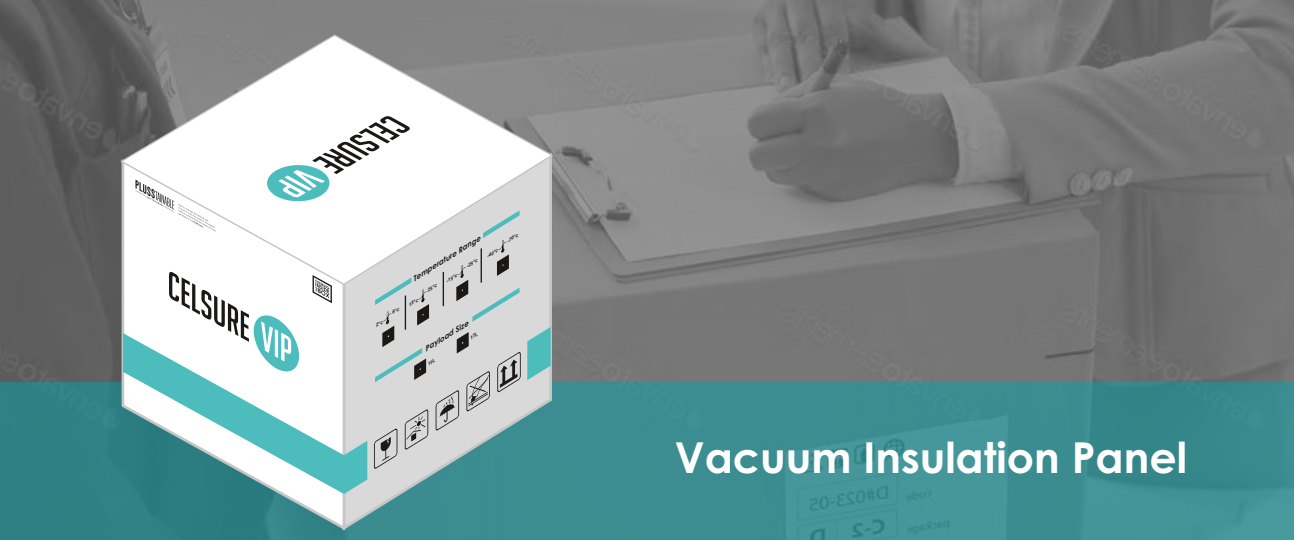


Pharma, Logistics,  
Clinical trials

# Pharma Logistics

## Temperature Controlled Packaging

### Parcel Shipper – Multi Use



### Celsure® VIP – Retention up to 120 hours

Model No.	Backup Hours (h)	Ext. Dims. (mm)	Payload Dims. (mm)	Payload Vol. (l)	Vol. Wt. (kg)	Tare Wt. (kg)
Temperature Range: 2 to 8°C, 15 to 25°C, and -25 to -15°C						
4L5D-08P/25P/25N VIP	120	310×310×310	155×155×155	4.0	6.0	8.9
11L5D-08P/25P/25N VIP	120	375×375×375	222×222×222	11.0	10.5	15.1
15L5D-08P/25P/25N VIP	120	402×402×402	247×247×247	15.0	13.0	18.3
26L5D-08P/25P/25N VIP	120	452×452×452	296×296×296	26.0	18.5	23.4

### Celsure® VIP – Retention up to 72 hours

Model No.	Backup Hours (h)	Ext. Dims. (mm)	Payload Dims. (mm)	Payload Vol. (l)	Vol. Wt. (kg)	Tare Wt. (kg)
Temperature Range: 2 to 8°C, 15 to 25°C, & -25 to -15°C						
8L3D-08P/25P/25N VIP	72	310×310×310	195×195×195	8.0	6.0	6.1
17L3D-08P/25P/25N VIP	72	375×375×375	260×260×260	18.0	10.5	10.1
25L3D-08P/25P/25N VIP	72	402×402×402	295×295×295	25.0	13.0	12.2
38L3D-08P/25P/25N VIP	72	452×452×452	336×336×336	38.0	18.5	17.2



4 to 38 litre



Multiple use



Up to 120 hours



Pharma, Logistics,  
Clinical trials



# Pharma Logistics

## Temperature Controlled Packaging

### Pallet Shipper – Single Use



Bulk Shipping Solution

#### Celsure® XL

Model No.	Backup Hours (h)	Ext. Dims. (mm)	Payload Dims. (mm)	Payload Vol. (l)	Vol. Wt. (kg)	Tare Wt. (kg)
-----------	------------------	-----------------	--------------------	------------------	---------------	---------------

##### Temperature Range: 2 to 8°C & 15 to 25°C

200L5D-08P/ 200L5D-25P	120	1200x800x800	970x570x360	200.0	128.0	92.0
330L5D-08P/ 330L5D-25P	120	1200x800x1100	980x570x595	330.0	176.0	138.0

##### Temperature Range: -25 to -15°C

200L5D-25N	120	1200x800x800	970x570x360	200.0	128.0	170.0
330L5D-25N	120	1200x800x1250	980x570x595	330.0	176.0	226.0



200 to 330 litre



Single use



Up to 120 hours



Pharma, Logistics,  
Clinical trials

# Pharma Logistics

## Temperature Controlled Packaging

### Reusable Last Mile Delivery System



Self-Carrying Freeze Free Vaccine Carrier

#### Celsure® FFVC

Model No.	Backup Hours (h)	Ext. Dims. (mm)	Payload Dims. (mm)	Payload Vol. (l)	Vol. Wt. (kg)	Tare Wt. (kg)
-----------	------------------	-----------------	--------------------	------------------	---------------	---------------

##### Temperature Range: 2 to 8°C

2L2D-08P(HC)	36-48	320x320x320	88x88x194	2.0	7.8	7.4
--------------	-------	-------------	-----------	-----	-----	-----



Self-Carrying Delivery Bags

#### PronGo®

Model No.	Backup Hours (h)	Ext. Dims. (mm)	Payload Dims. (mm)	Payload Vol. (l)	Vol. Wt. (kg)	Tare Wt. (kg)
-----------	------------------	-----------------	--------------------	------------------	---------------	---------------

##### Temperature Range: 2 to 8°C; 15 to 25°C and -25 to -15°C

3L12H-08P/ 3L12H-25P/ 3L12H-25N	10-12	200x200x220	143x143x153	3.0	1.5	3.0
20L12H-08P/ 20L 12H-25P/ 20L12H-25N	10-12	375x215x490	310x150x450	20.0	6.6	5.1



4 to 38 litre



Multiple use



Up to 120 hours



Diagnostics

# Pharma Logistics

## Phase Change Materials (PCM)



saveE® PCM	Phase Change Temperature (°C)	Latent Heat Melting (kJ/Kg)	Liquid Density (kg/L)	PCM type
Temperature Range: -80 to -50°C				
HS75N	-75	209	1.19	Hydrated Salt
HS65N	-65	172	1.16	Hydrated Salt
Temperature Range: -25 to -15°C				
HS30N	-30	197	1.43	Hydrated Salt
HS26N	-26	264	1.20	Hydrated Salt
HS23N	-23	274	1.16	Hydrated Salt
Temperature Range: 2 to 8°C				
OM03	03	196	0.84	Organic Material
OM05P	05	213	0.76	Organic Material
OM05LP	05	205	0.76	Organic Material
Temperature Range: 15 to 25°C				
OM18P	18	208	0.76	Organic Material
HS22	22	190	1.54	Hydrated Salt

- Precise temperature
- High energy density
- Tested for over 3000 cycles
- Sustainable and non-hazardous unlike dry ice
- Available as bulk and encapsulated
- Both standard and custom encapsulations available

# Healthcare

## Essential New Born Care



Therapeutic hypothermia, that is, controlled cooling of babies at 33 °C for 72 hours is the only clinically proven method to treat birth asphyxia, the second largest cause of neonatal deaths globally.

MiraCradle® Neonate Cooler is a safe, clinically validated, CE-approved device that made cooling simpler, efficient, and 10 times more affordable. Installed in over 500 hospital settings, the device is already helping save over 20,000 babies every year.



- SAFE**  
Electricity free cooling system does not have any electrical supply near the baby
- EFFICIENT**  
Gives precise temperature control
- EASY TO USE**  
Minimal manual supervision required. PCMs can be charged in a normal refrigerator
- ECONOMICAL**  
Less than 1/5th of the cost of the available electronic devices
- LONG LASTING**  
The PCMs are designed for repetitive use