



va-Q-tainer[®]

A va-Q-tec TempChain Solution





Always the right temperature

Vacuum Insulation Panels (VIPs) are used wherever space is limited and excellent thermal insulation is required. va-Q-tec has been pioneering the field since 2001 to help resolve difficult spatial design problems, and offers a range of products including cost effective customized VIPs and heat & cold storage elements containing phase change materials (PCMs).

The temperature-controlled logistics field requires everyone to stay up-dated and innovative to comply with the latest regulations and demands. va-Q-tec created the term "TempChain" to replace "cold chain" to encompass all areas and temperature ranges of temperaturecontrolled logistics regardless of the environment and outside temperature.

Why va-Q-tec:

- Reliable and safe
- High-performance in all climates
- Door to door solution (no airport restriction)
- Environmental friendly and lightweight
- A solution for any thermal challenge
- Saves space and energy
- No external energy supply needed
- Passive solution prevent technical problem
- 100% VIP and PCM controlled thermal packaging
- Award winning technology
- More than 30 worldwide active patents

"With our passive technology and expertise, we provide our clients with cost-efficient, safe and green packaging."

Dr Joachim Kuhn, Founder & CEO



va-Q-accus define the temperature

Phase Change Material (PCM) accumulates and releases thermal energy during melting and freezing, to perfectly maintain the required product storage temperature for the duration of transportation.

VIPs maintain the defined temperature

VIPs – Vacuum Insulation Panels – are flat panels for optimized temperature insulation that are based on the principle of the thermos flask. These panels offer unparalleled heat and cold insulation at minimum thickness.

Qualified High Performance Packaging

As a core component manufacturer, we design and produce products with state of the art solutions and many economic and ecological advantages, such as recycling possibilities and superior quality with an excellent price/performance ratio. Our products are designed with one pack-out configuration for all seasons that simplifies handling and reduces risk. They are validated to strict standards to ensure safe transportation cycles of many days.



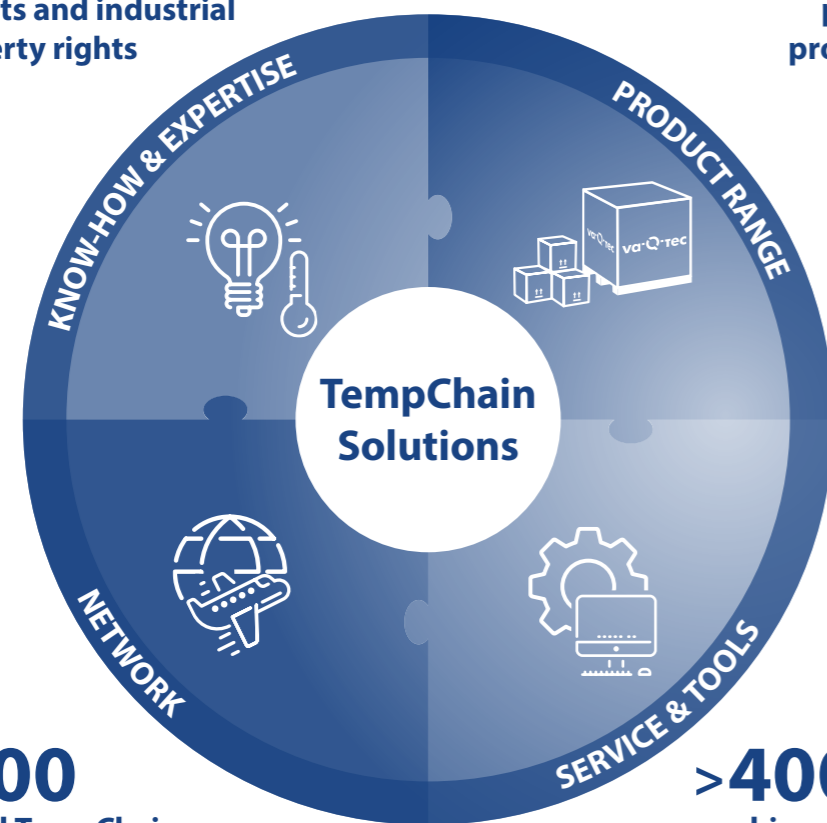
Business Unit Healthcare & Logistics

>180

patents and industrial property rights

>1.000

products and product set ups



>500

global TempChain Service Centers and Drop Points

>400.000

shipments per year run via the TempChain Service Software



va-Q-tec pioneered TempChain **Know-how & Expertise** already since 2003 by creating the first passive PCM/VIP thermal packaging Solutions. Therefore the company is able to provide extensive engineering consulting and professional laboratory service.



All temperatures and all volumes can be served from va-Q-tec's comprehensive **Product range**. Even the most challenging destinations.

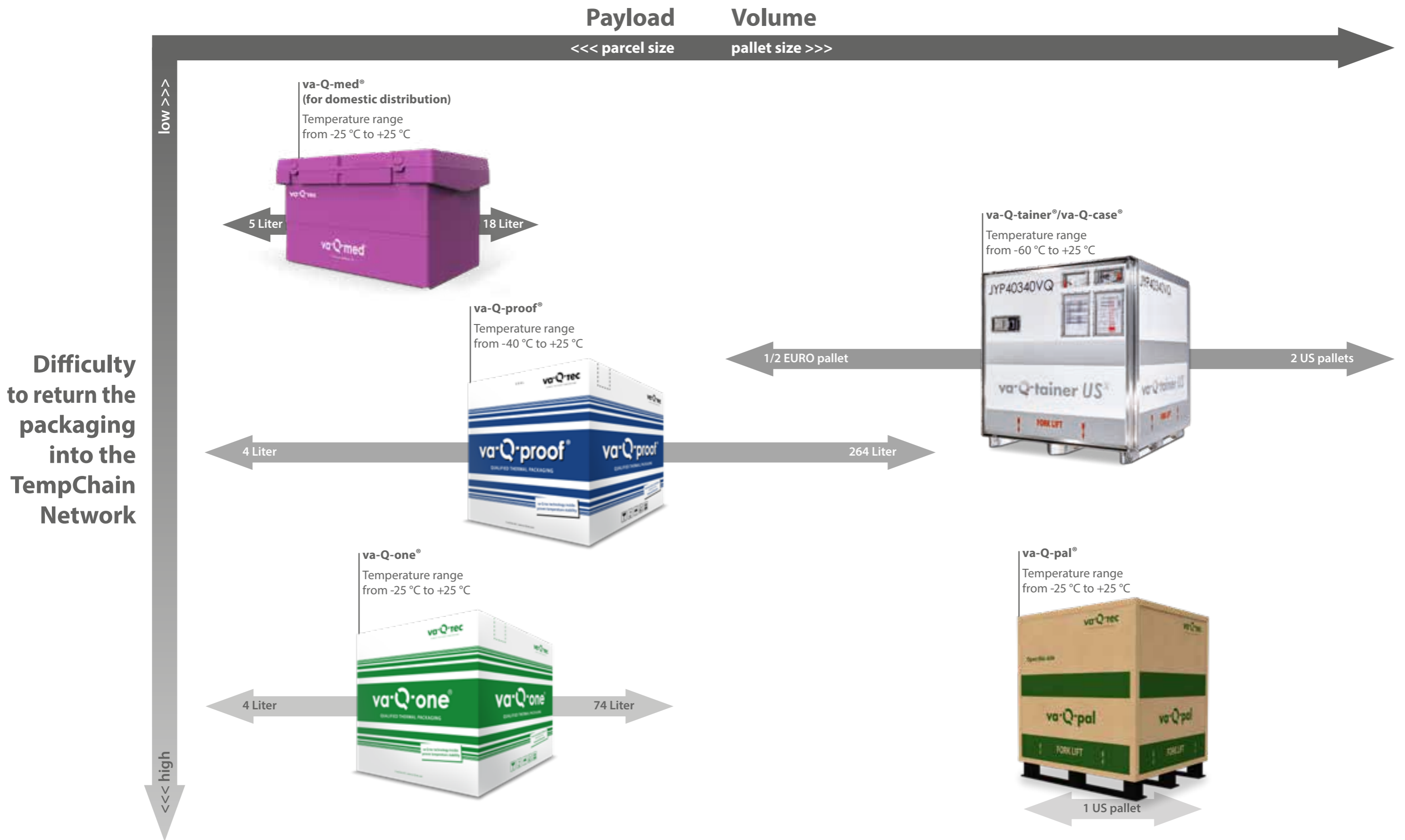


More than 1.5 Mio. boxes and containers have been pre-conditioned in va-Q-tec's qualified TempChain **Service**. This process is enabled by unique **Tools** such as the patented quality control system va-Q-check®.



In va-Q-tec's TempChain **Network**, 2.000 containers and several 10.000 boxes can secure global availability and quick delivery from 35 TempChain Service Centers worldwide.

The most comprehensive thermal packaging portfolio





- Qualified performance w/o payload inside at 30 °C and 0 °C: >120h
- Optimized outer dimensions for PMC pallet:
4 Euro pallets (w/ 4 EUROx) or 4 US pallets (w/ 2 TWINx)
- Qualified temperature ranges from -60 °C to +25 °C
- Core Components & Technology "MADE IN GERMANY"
- Space and cost saving pre-conditioning
- Container is delivered re-qualified w/ va-Q-check® ready to "load & go"
- All sizes (except the TWINx) are forkliftable



va-Q-accu +18G/+23G for +15 °C to +25 °C va-Q-accu +05G for +2 °C to +8 °C va-Q-accu -21G for -25 °C to -15 °C va-Q-accu -37G for -40 °C to -20 °C with dry ice for below -60 °C

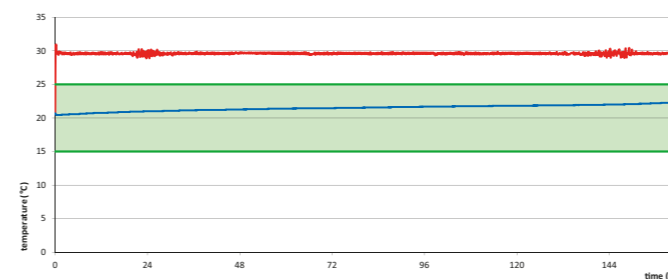
Other temperature ranges available on request: e.g. body temperature, etc.

Including	External Dimensions (l x w x h)		Internal Product Space (l x w x h)		Payload Volume		Total Weight		Volumetric weight [kg]	Minimum performance	
	[cm]	[inch]	[cm]	[inch]	[m³]	[ft³]	[kg]	[lbs]		[hours]	[KelvinHours] ¹
va-Q-accu +18G/+23G ²	80 x 60 x 80	31.5 x 23.6 x 31.5	61 x 34 x 47	23.8 x 13.4 x 18.5	0.1	3.5	116	256	64	≥ 162	≥ 1,636
va-Q-accu +05G ²	80 x 60 x 80	31.5 x 23.6 x 31.5	61 x 34 x 47	23.8 x 13.4 x 18.5	0.1	3.5	115	253	64	≥ 230	≥ 5,796
va-Q-accu -21G ³	80 x 60 x 80	31.5 x 23.6 x 31.5	61 x 34 x 47	23.8 x 13.4 x 18.5	0.1	3.5	152	336	64	≥ 120	≥ 6,012
va-Q-accu -37G ⁴	80 x 60 x 80	31.5 x 23.6 x 31.5	61 x 34 x 47	23.8 x 13.4 x 18.5	0.1	3.5	124	275	64	≥ 105	≥ 6,804
dry ice ²	80 x 60 x 80	31.5 x 23.6 x 31.5	61 x 34 x 47	23.8 x 13.4 x 18.5	0.1	3.5	131	289	64	≥ 214	≥ 21,293

Real test examples

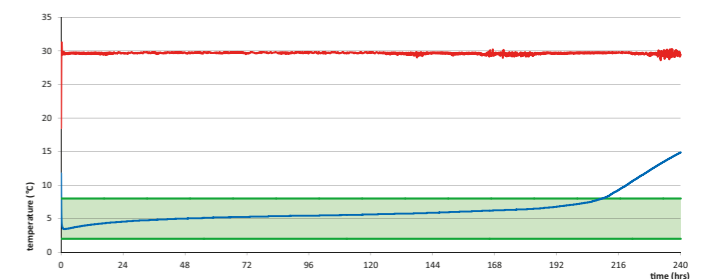
With va-Q-accu +18G/+23G²

- Time between +15.0 °C and +25.0 °C: > 161 hours
- Temp x time: > 1,545 KelvinHours



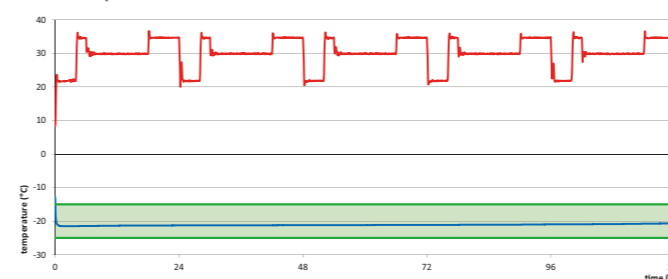
With va-Q-accu +05G²

- Time between +2.0 °C and +8.0 °C: 210 hours
- Temp x time: 5,177 KelvinHours



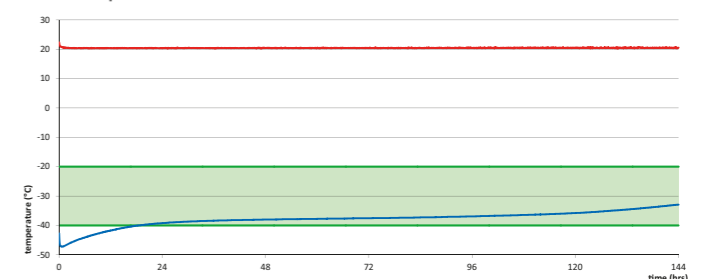
With va-Q-accu -21G³

- Time between -25.0 °C and -15.0 °C: > 120 hours
- Temp x time: > 6,013 KelvinHours



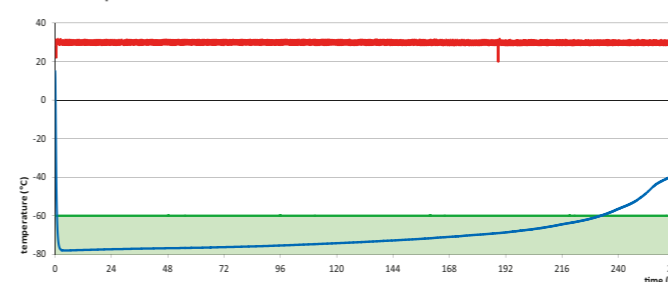
With va-Q-accu -37G⁴

- Time between -40.0 °C and -20.0 °C: > 144 hours
- Temp x time: > 7,272 KelvinHours



With dry ice²

- Time below -60.0 °C: 233 hours
- Temp x time: 23,230 KelvinHours



— ambient — center of good — requested range

¹ The easy way to reliably compare thermal packaging solutions: More information at www.va-Q-tec.com/en/consulting/kelvinhours/

² Qualified test scenario at constant ambient temperature of +30 °C

³ Qualified test scenario according to ISTA 7D summer

⁴ Qualified test scenario at constant ambient temperature of +20 °C

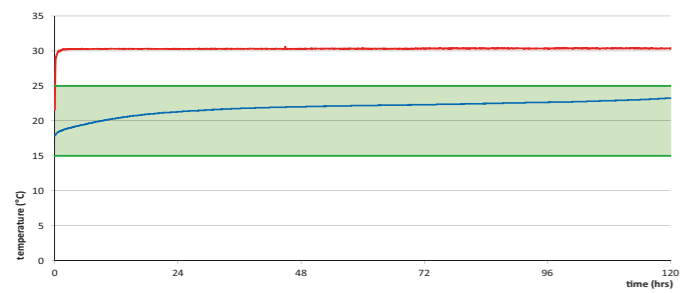
va-Q-tainer® EUROX data

Including	External Dimensions (l x w x h)		Internal Product Space (l x w x h)		Payload Volume		Total Weight		Volumetric weight [kg]	Minimum performance	
	[cm]	[inch]	[cm]	[inch]	[m³]	[ft³]	[kg]	[lbs]		[hours]	[KelvinHours] ¹
va-Q-accu +18G/+23G ²	142 x 109 x 158	56.0 x 43.0 x 62.2	120 x 85 x 117	47.2 x 33.5 x 46.1	1.2	43.9	471	1,038	408	≥ 120	≥ 1,176
va-Q-accu +05G ²	142 x 109 x 158	56.0 x 43.0 x 62.2	120 x 85 x 117	47.2 x 33.5 x 46.1	1.2	43.9	450	992	408	≥ 125	≥ 3,163
va-Q-accu -21G ²	142 x 109 x 158	56.0 x 43.0 x 62.2	120 x 85 x 117	47.2 x 33.5 x 46.1	1.2	43.9	500	1,103	408	≥ 102	≥ 5,100
va-Q-accu -37G ³	142 x 109 x 158	56.0 x 43.0 x 62.2	120 x 85 x 117	47.2 x 33.5 x 46.1	1.2	43.9	540	1,190	408	≥ 72	≥ 3,600
dry ice ²	142 x 109 x 158	56.0 x 43.0 x 62.2	120 x 85 x 117	47.2 x 33.5 x 46.1	1.2	43.9	488	1,076	408	≥ 120	≥ 10,800

Real test examples

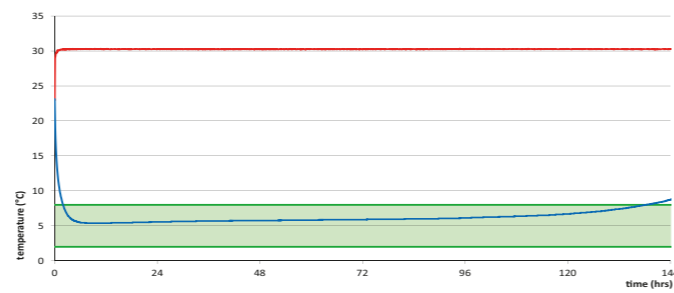
With va-Q-accu +18G/+23G²

- Time between +15.0 °C and +25.0 °C: **> 148 hours**
- Temp x time: **> 1,524 KelvinHours**



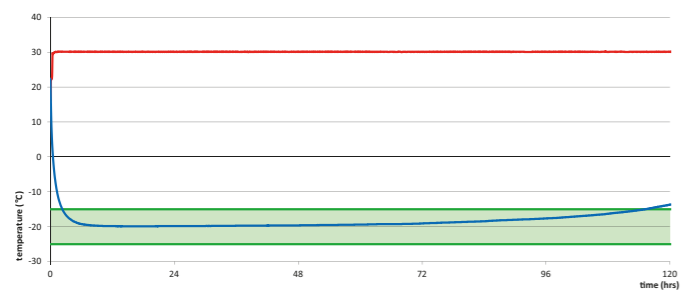
With va-Q-accu +05G²

- Time between +2.0 °C and +8.0 °C: **129 hours**
- Temp x time: **3,264 KelvinHours**



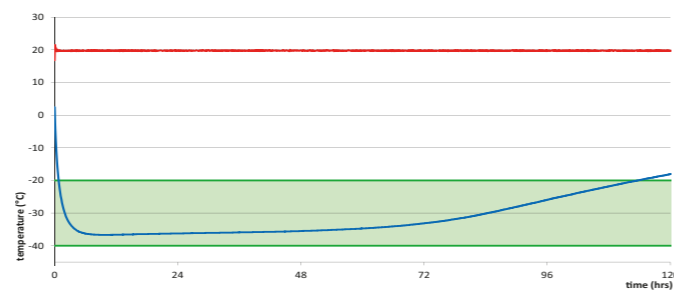
With va-Q-accu -21G²

- Time between -25.0 °C and -15.0 °C: **107 hours**
- Temp x time: **4,004 KelvinHours**



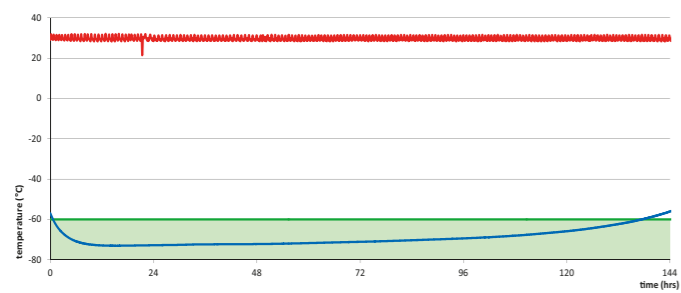
With va-Q-accu -37G³

- Time between -40.0 °C and -20.0 °C: **107 hours**
- Temp x time: **5,329 KelvinHours**



With dry ice²

- Time below -60.0 °C: **130 hours**
- Temp x time: **12,974 KelvinHours**



— ambient — center of good — requested range

¹ The easy way to reliably compare thermal packaging solutions: More information at www.va-Q-tec.com/en/consulting/kelvinhours/
² Qualified test scenario at constant ambient temperature of +30 °C
³ Qualified test scenario at constant ambient temperature of +20 °C

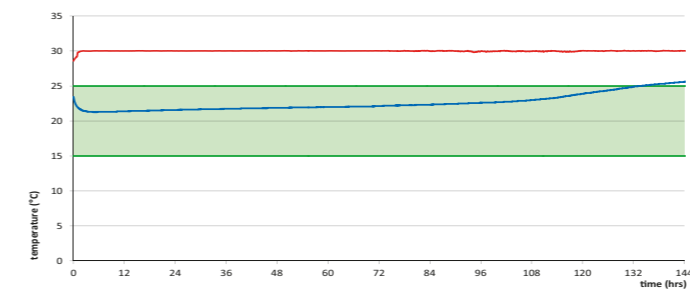
va-Q-tainer® USx data

Including	External Dimensions (l x w x h)		Internal Product Space (l x w x h)		Payload Volume		Total Weight		Volumetric weight [kg]	Minimum performance	
	[cm]	[inch]	[cm]	[inch]	[m³]	[ft³]	[kg]	[lbs]		[hours]	[KelvinHours] ¹
va-Q-accu +18G/+23G ²	142 x 149 x 158	56.0 x 58.7 x 62.2	120 x 125 x 117	47.2 x 49.2 x 46.1	1.8	62.0	531	1,171	557	≥ 144	≥ 1,442
va-Q-accu +05G ²	142 x 149 x 158	56.0 x 58.7 x 62.2	120 x 125 x 117	47.2 x 49.2 x 46.1	1.8	62.0	531	1,171	557	≥ 120	≥ 3,000
va-Q-accu -21G ²	142 x 149 x 158	56.0 x 58.7 x 62.2	120 x 125 x 117	47.2 x 49.2 x 46.1	1.8	62.0	599	1,321	557	≥ 114	≥ 5,589
va-Q-accu -37G ³	142 x 149 x 158	56.0 x 58.7 x 62.2	120 x 125 x 117	47.2 x 49.2 x 46.1	1.8	62.0	640	1,410	557	≥ 99	≥ 4,950
dry ice ²	142 x 149 x 158	56.0 x 58.7 x 62.2	120 x 1250x 117	47.2 x 49.2 x 46.1	1.8	62.0	578	1,274	557	≥ 118	≥ 11,753

Real test examples

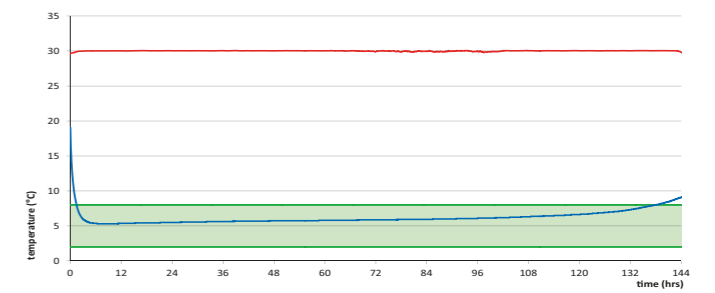
With va-Q-accu +18G/+23G²

- Time between +15.0 °C and +25.0 °C: **132 hours**
- Temp x time: **1,320 KelvinHours**



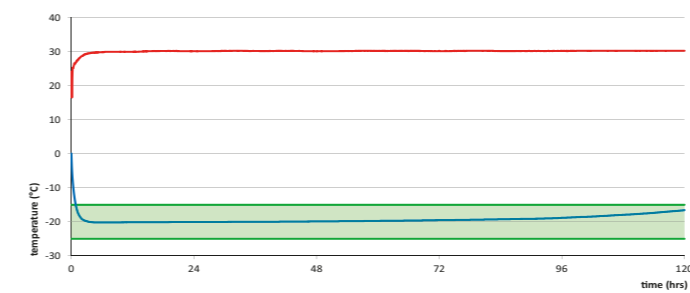
With va-Q-accu +05G²

- Time between +2.0 °C and +8.0 °C: **131 hours**
- Temp x time: **3,275 KelvinHours**



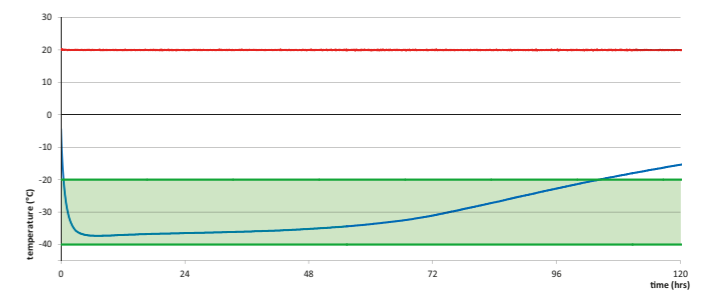
With va-Q-accu -21G²

- Time between -25.0 °C and -15.0 °C: **> 120 hours**
- Temp x time: **> 6,012 KelvinHours**



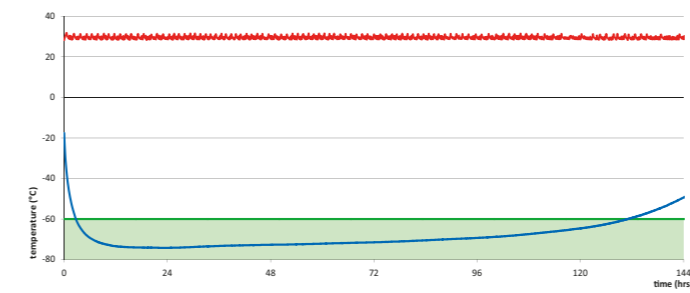
With va-Q-accu -37G³

- Time between -40.0 °C and -20.0 °C: **102 hours**
- Temp x time: **5,100 KelvinHours**



With dry ice²

- Time below -60.0 °C: **117 hours**
- Temp x time: **11,719 KelvinHours**



— ambient — center of good — requested range

¹ The easy way to reliably compare thermal packaging solutions: More information at www.va-Q-tec.com/en/consulting/kelvinhours/
² Qualified test scenario at constant ambient temperature of +30 °C
³ Qualified test scenario at constant ambient temperature of +20 °C

va-Q-tainer® XLx data

Including	External Dimensions (l x w x h)		Internal Product Space (l x w x h)		Payload Volume		Total Weight		Volumetric weight [kg]	Minimum performance	
	[cm]	[inch]	[cm]	[inch]	[m³]	[ft³]	[kg]	[lbs]		[hours]	[KelvinHours] ¹
va-Q-accu +18G/+23G ²	189 x 149 x 158	74.4 x 58.7 x 62.2	164 x 125 x 122	64.6 x 49.2 x 48.0	2.5	89.4	650	1,433	742	≥ 139	≥ 738
va-Q-accu +05G ²	189 x 149 x 158	74.4 x 58.7 x 62.2	164 x 125 x 122	64.6 x 49.2 x 48.0	2.5	89.4	649	1,431	742	≥ 111	≥ 2,853
va-Q-accu -21G ²	189 x 149 x 158	74.4 x 58.7 x 62.2	164 x 125 x 122	64.6 x 49.2 x 48.0	2.5	89.4	660	1,459	742	≥ 136	≥ 6,773
va-Q-accu -37G ³	189 x 149 x 158	74.4 x 58.7 x 62.2	164 x 125 x 122	64.6 x 49.2 x 48.0	2.5	89.4	829	1,828	742	≥ 110	≥ 5,489

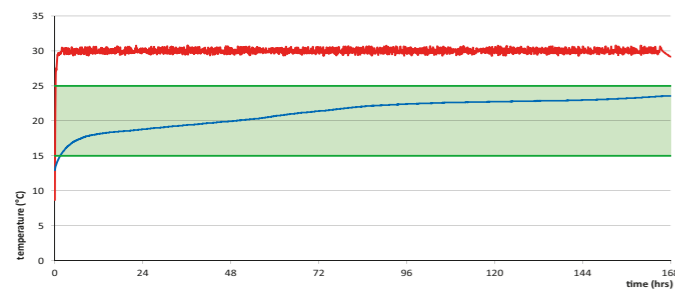
va-Q-tainer® TWINx data

Including	External Dimensions (l x w x h)		Internal Product Space (l x w x h)		Payload Volume		Total Weight		Volumetric weight [kg]	Minimum performance	
	[cm]	[inch]	[cm]	[inch]	[m³]	[ft³]	[kg]	[lbs]		[hours]	[KelvinHours] ¹
va-Q-accu +18G/+23G ²	238 x 149 x 158	93.7 x 58.7 x 62.2	211 x 125 x 122	83.1 x 49.2 x 48.0	3.2	114	823	1,811	934	≥ 125	≥ 1,238
va-Q-accu +05G ²	238 x 149 x 158	93.7 x 58.7 x 62.2	211 x 125 x 122	83.1 x 49.2 x 48.0	3.2	114	815	1,797	934	≥ 124	≥ 3,088
va-Q-accu -21G ²	238 x 149 x 158	93.7 x 58.7 x 62.2	211 x 125 x 122	83.1 x 49.2 x 48.0	3.2	114	914	2,016	934	≥ 136	≥ 6,773
va-Q-accu -37G ³	238 x 149 x 158	93.7 x 58.7 x 62.2	211 x 125 x 122	83.1 x 49.2 x 48.0	3.2	114	975	2,150	934	≥ 103	≥ 5,150
dry ice ²	238 x 149 x 158	93.7 x 58.7 x 62.2	211 x 125 x 122	83.1 x 49.2 x 48.0	3.2	114	884	1,949	934	≥ 124	≥ 12,338

Real test examples

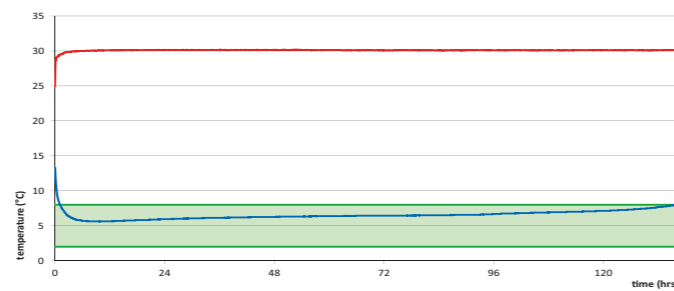
With va-Q-accu +18G/+23G²

- Time between +15.0 °C and +25.0 °C: **> 168 hours**
- Temp x time: **> 1,680 KelvinHours**



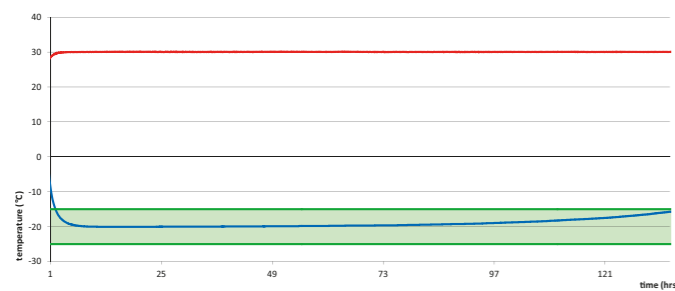
With va-Q-accu +05G²

- Time between +2.0 °C and +8.0 °C: **133 hours**
- Temp x time: **3,338 KelvinHours**



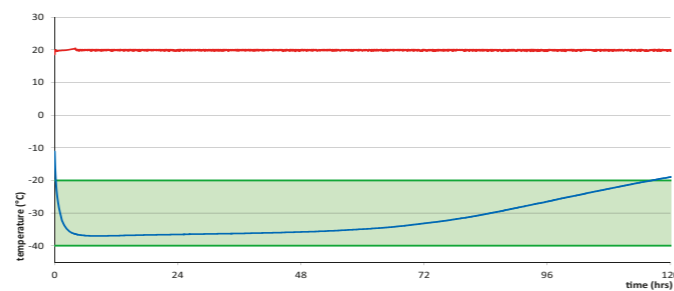
With va-Q-accu -21G²

- Time between -25.0 °C and -15.0 °C: **127 hours**
- Temp x time: **6,343 KelvinHours**



With va-Q-accu -37G³

- Time between -40.0 °C and -20.0 °C: **113 hours**
- Temp x time: **5,644 KelvinHours**



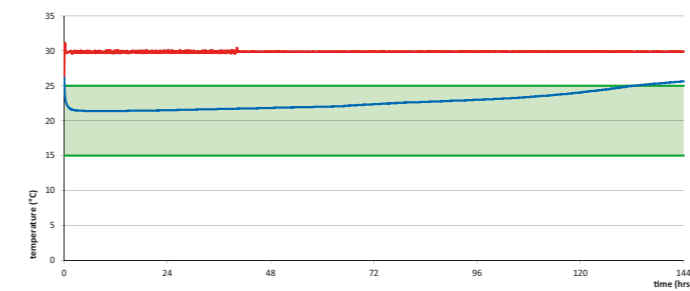
— ambient — center of good — requested range

¹ The easy way to reliably compare thermal packaging solutions: More information at www.va-Q-tec.com/en/consulting/kelvinhours/
² Qualified test scenario at constant ambient temperature of +30 °C
³ Qualified test scenario at constant ambient temperature of +20 °C

Real test examples

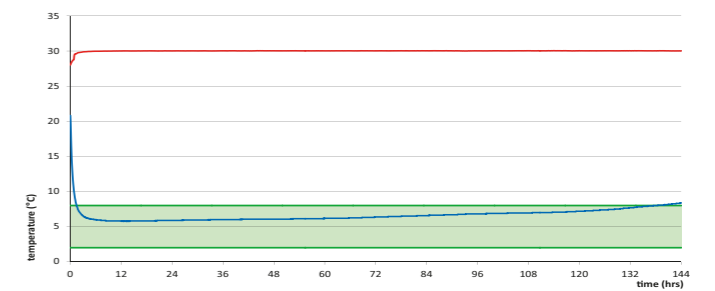
With va-Q-accu +18G/+23G²

- Time between +15.0 °C and +25.0 °C: **125 hours**
- Temp x time: **1,238 KelvinHours**



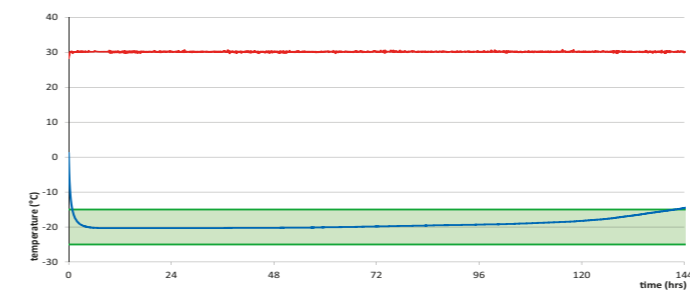
With va-Q-accu +05G²

- Time between +2.0 °C and +8.0 °C: **139 hours**
- Temp x time: **3,475 KelvinHours**



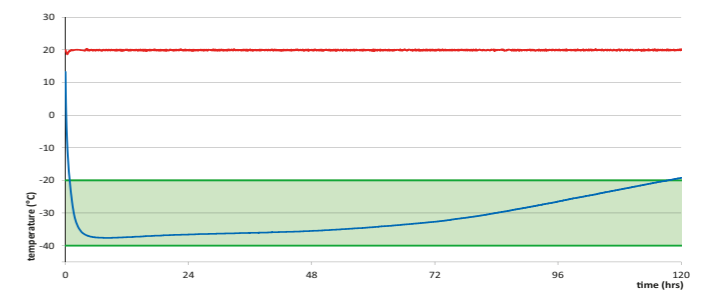
With va-Q-accu -21G²

- Time between -25.0 °C and -15.0 °C: **140 hours**
- Temp x time: **7,014 KelvinHours**



With va-Q-accu -37G³

- Time between -40.0 °C and -20.0 °C: **115 hours**
- Temp x time: **5,758 KelvinHours**



— ambient — center of good — requested range

¹ The easy way to reliably compare thermal packaging solutions: More information at www.va-Q-tec.com/en/consulting/kelvinhours/
² Qualified test scenario at constant ambient temperature of +30 °C
³ Qualified test scenario at constant ambient temperature of +20 °C

Global contacts:

va-Q-tec AG

Global Headquarter

Alfred-Nobel-Str. 33
97080 Würzburg
Germany

Tel. +49 931 35942-0

info@va-Q-tec.com

va-Q-tec Switzerland AG

c/o PKF Consulting AG
Lavaterstrasse 40
8002 Zürich
Switzerland

Tel +49 931 35942-1611

switzerland@va-Q-tec.com

va-Q-tec UK Ltd.

105 Laker Road
Rochester Airport
Industrial Estate
Rochester, Kent ME1 3QX
United Kingdom

Tel. +44 1634 86 86 18

uk@va-Q-tec.com

va-Q-tec USA Inc.

2221 Cabot Blvd W
Langhorne, PA 19047
United States of America

Tel. +1-201-340-2727

usa@va-Q-tec.com

va-Q-tec Uruguay S.A.

Zonamerica
Business & Technology Park
Edificio Celebra - Oficina 103
Ruta 8 Km 17.500 CP 91600
Montevideo - Uruguay

Tel. +598 25182997

latin.america@va-Q-tec.com

va-Q-tec Korea Ltd.

1706 Ho 2Dong
Ace High-Tech City 775
Gyeongin-ro,
Yeongdeungpo-gu
Seoul, 07299
South Korea

Tel. +82 2 6309-8989

korea@va-Q-tec.com

va-Q-tec Japan G.K.

7F Toranomom 40MT
Building
5-13-1 Toranomom,
Minatoku
Tokyo 105-0001
Japan

Tel. +81 80 59564808

japan@va-Q-tec.com

va-Q-tec Singapore Pte Ltd.

11 Changi South Street 3
B1-01
486122 Singapore
Singapore

Tel. +65 6817-6767

singapore@va-Q-tec.com