



Product data, safety sheet and test report for Gel packs 0 °C



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1. Description and how to use

Gel packs are used to keep temperature sensitive products refrigerated during shipments. The gel packs are meant for single use but can be used multiple times if cleaned properly with lukewarm water and normal household soap.

0 °C gel packs are normally used for products that needs to be kept at +2 to + 8 °C. However, this depends on the shipping method used, how and how many gel packs used. The gel packs must either be frozen or refrigerated, depending on the desired use.

Contact us for technical details.

2. Sizes

2.1 Article number

2015400-OC –400 ml

2015400x2-OC –400 ml double

2018800/OC –800 ml

2.2 Standard dim

2015400/OC –400 ml+/-2-3 %
(200 x 150 x ca. 25 mm)

2015400x2-OC –400 ml double +/-2-3 %
(200 x 300 x ca. 25 mm)

2018800/OC –800 ml+/-2-3 %
(200 x 180 x ca. 35 mm)

2.3 Standard packaging – Dim. Cardboard (379x 284x 165 mm)

2015400/OC – 400 ml – 30 pcs

2015400x2-OC – 400 ml double – 16 pcs

2018800/OC – 800 ml – 16 pcs

56 cardboard boxes on a euro pallet (400 ml)/

48 cardboard boxes (800 ml)

3. Foil

The foil consists of OPA-transparent and PE-transparent.

Thickness 15 + 70 my.

ASTM 3985 -ASTM 1249 / DIN 53122

Shelf life: Minimum 2 years

(avoid direct sunlight. UV light degrades our BIO-based gel mass)

4. Gel mass

The main ingredient is water with a little Sodium Polyacrylate. Chlorine is added to the gel mass, which neutralizes the bacteria that can occur in the water when mixing. Oxyplus is added to neutralize bacteria that may occur over time.

5. Dosage of preservative

SunWacchlorine: 0.0013 g pr. 400 g gel pack

Oxyplus: 0.008 ml pr. 400 ml gel pack

6. Disposal

Can be disposed of with household waste. Biodegradable gellmass. The gellmass will be downgraded to water after 3-6 days, when exposed to UV/sunlight. To downgrade the gellmass faster, mix it with a little bit of kitchen salt, then it can be poured down the drain.

7. Material properties

Thermal conductivity: 0,6 W (m x k) at 20 °C

Density: 0,997 kg/lat 18 °C

Volume expansion: 10-12 %

Flash point: Non-flammable

Slightly Corrosive to metals

8. Safety

The gel packs are not harmful to humans or the environment.

Don't eat or feed to animals. Gel packs are not meant for human or animal consumption.

Don't use as ice cubes in beverage or drinks.

If eaten or swallowed seek doctor or hospital and show this data sheet.

Phone this number incase of an emergency:

+45 61132000

9. Import / Export tariff code

3824999699

10. Correct Freezing of gelpacks

The gelpacks need to be proper frozen to give the maximum energy.



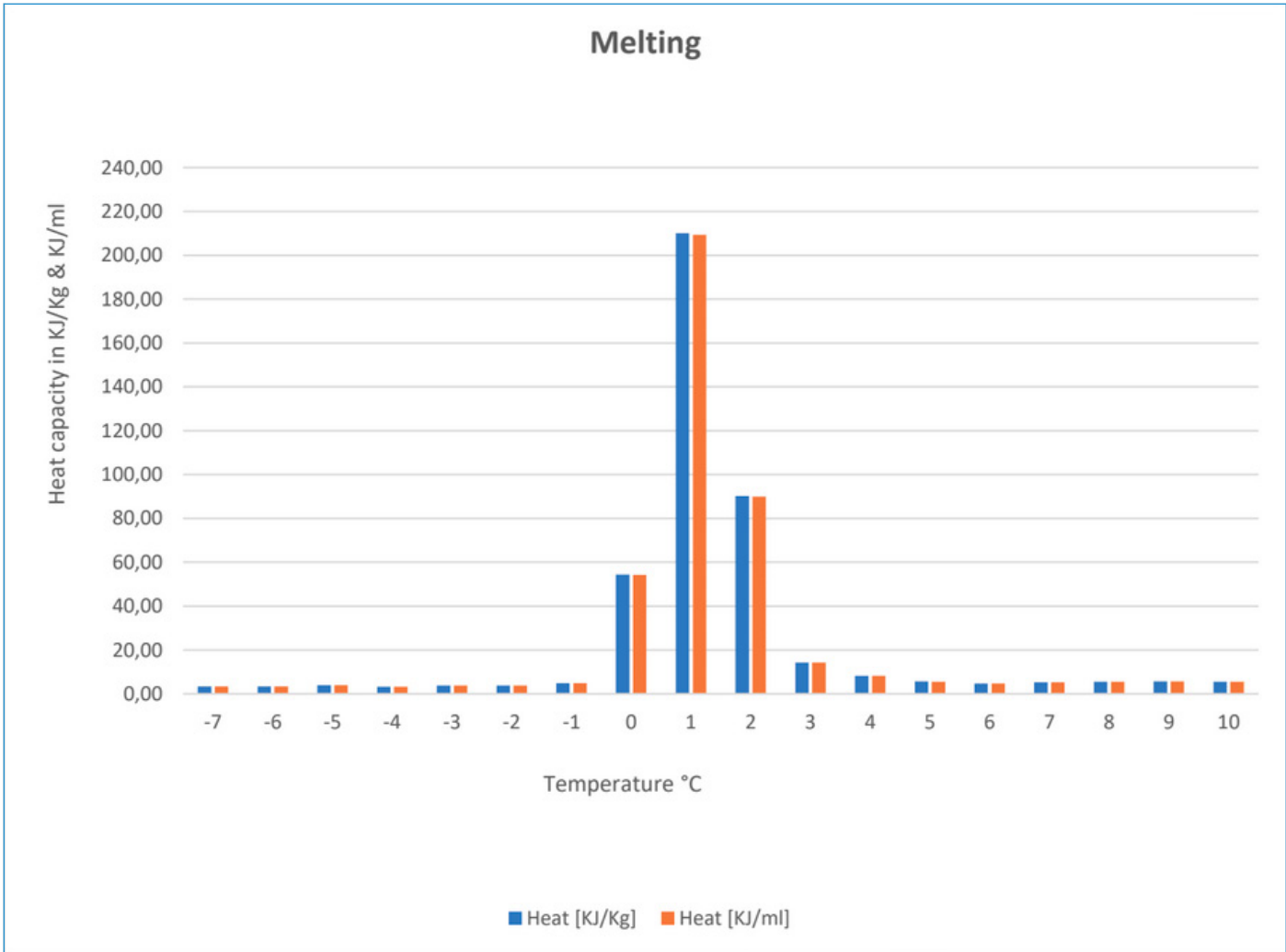
not frozen

completely frozen

11. Energy content

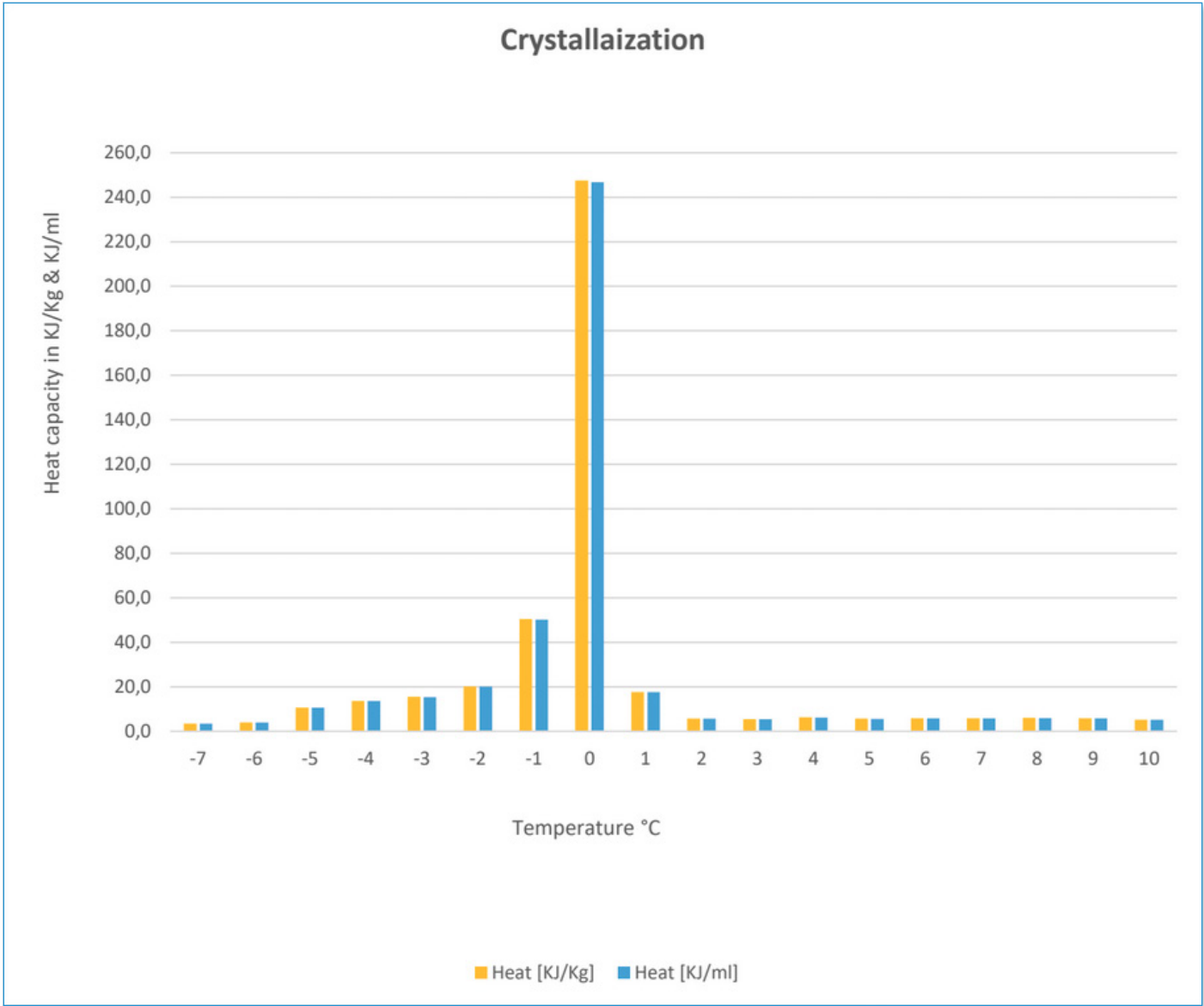
3 layer calorimeter test of FriloTech Frilo OC gelpacks (-7 to +10 °C)*

Melting -7 to +10 °C				
Onset (°C)	Peak (°C)	Offset (°C)	Capacity (KJ/Kg)	Capacity (KJ/Kg) Phase changing
0	1	2	435,77	354,58



Melting - Temperature distribution *					
Temperature interval				Stored heat	
(°C)				Heat (KJ/Kg)	Heat (KJ/ml)
-7	-6,5	-	-7,5	3,35	3,34
-6	-5,5	-	-6,5	3,39	3,38
-5	-4,5	-	-5,5	3,93	3,91
-4	-3,5	-	-4,5	3,30	3,29
-3	-2,5	-	-3,5	3,77	3,76
-2	-1,5	-	-2,5	3,75	3,74
-1	-0,5	-	-1,5	4,83	4,81
0	0,5	-	-0,5	54,43	54,27
1	1,5	-	0,5	210,00	209,37
2	2,5	-	1,5	90,16	89,89
3	3,5	-	2,5	14,28	14,23
4	4,5	-	3,5	8,22	8,19
5	5,5	-	4,5	5,60	5,59
6	6,5	-	5,5	4,67	4,66
7	7,5	-	6,5	5,23	5,21
8	8,5	-	7,5	5,57	5,56
9	9,5	-	8,5	5,72	5,71
10	10,5	-	9,5	5,57	5,56
				Total	
Density at +18 °C		kg/l	0,997	435,77	434,46

Crystallization +10 to -7 °C				
Onset (°C)	Peak (°C)	Offset (°C)	Capacity (KJ/Kg)	Capacity (KJ/Kg) Phase changing
-2	0	1	434,3	335,60



Crystallization - Temperature distribution *					
Temperature interval				Stored heat	
(°C)				Heat (KJ/Kg)	Heat (KJ/ml)
-7	-6,5	-	-7,5	3,5	3,4
-6	-5,5	-	-6,5	3,9	3,9
-5	-4,5	-	-5,5	10,7	10,7
-4	-3,5	-	-4,5	13,6	13,6
-3	-2,5	-	-3,5	15,5	15,4
-2	-1,5	-	-2,5	20,1	20,0
-1	-0,5	-	-1,5	50,4	50,2
0	0,5	-	-0,5	247,5	246,8
1	1,5	-	0,5	17,6	17,6
2	2,5	-	1,5	5,7	5,7
3	3,5	-	2,5	5,4	5,4
4	4,5	-	3,5	6,2	6,2
5	5,5	-	4,5	5,6	5,6
6	6,5	-	5,5	5,8	5,8
7	7,5	-	6,5	5,8	5,7
8	8,5	-	7,5	6,0	6,0
9	9,5	-	8,5	5,8	5,8
10	10,5	-	9,5	5,1	5,1
				Total	
Density at +18 °C		kg/l	0,997	434,3	433

12. Test example, 24 & 48 hours transport

12.1 Setup before 24 hours test

Test is made during the 24-2 to 25-2 -2021

Test performed in our EPS box 210

Exterior dimensions: 350 x 350 x 300 mm

Internal dimensions: 250 x 250 x 200 mm

Wall thickness: 50 mm

Density: 25 g / liter

Number of gel packs: 4 pcs. 400 ml 0 °C (2 pcs. Top and 2 pcs. Bottom)

Gel packs frozen at -22 °C for 48 hours.

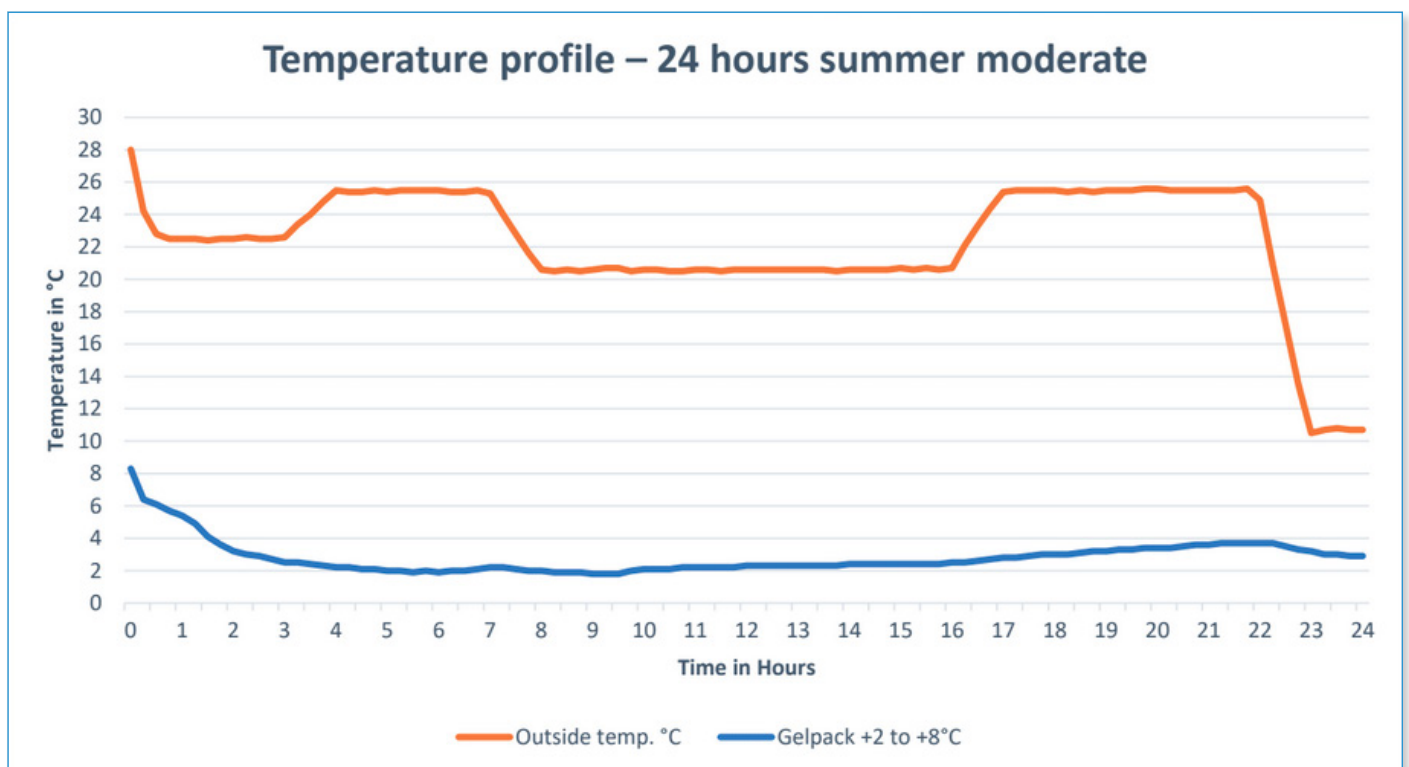
Gel packs acclimatized at +20 °C for 30 min before packing.

Payload: 2 water bottles of 0.85 liter with a start temperature of + 6 °C.

Average outside temperature: +21.72 °C



EPS box 210



12.2 Setup before 28 hours test

Test is made during the 19-2 to 21-2 -2021.*

Test performed in our EPS box 210

Exterior dimensions: 350 x 350 x 300 mm

Internal dimensions: 250 x 250 x 200 mm

Wall thickness: 50 mm

Density: 25 g / liter

Number of gel packs: 6 pcs. 400 ml 0 °C (2 pcs. Top and 4 pcs. Distributed on each side)

Gel packs frozen at -22 °C for 48 hours.

Gel packs acclimatized at +20 °C for 25 min before packing.

Payload: 1 water bottles of 1 liter with a start temperature of + 7 °C.

To prevent the temperature from going below + 2 °C, one gel pack 400 g 0 °C has only been cooled and not frozen and then placed under the payload (water bottle)

Average outside temperature: + 25.85 °C

