



PRODUCT TECHNICAL DATA SHEET

Rev. 01 of 05/02/2007

GRANA PADANO CHEESE D.O.P.



PRODUCT DESCRIPTION

Semi-fat hard cheese which is cooked and ripened slowly. It is produced by curdling the milk of cows who are fed on green and dried forages. The cows are milked twice a day, the milk is left to stand, and then partially creamed.

D.O.P. CERTIFICATIONS

Grana Padano is a Protected Designation of Origin (D.O.P.) cheese as specified by the European Union law; Reg. EC n. 1107/96.

INGREDIENTS

Cow's whole milk, salt, calf rennet, lysozyme (natural protein from egg). The enzyme lysozyme can be added to cheesemilk in order to prevent cheese blowing.

CHEESEMAKING

Grana Padano is a D.O.P. cheese. Its Production Disciplinary states that it must be produced with raw milk from cows which are milked a maximum of twice a day and only made in dairies authorised by CSQA (a single authority for the certification of Grana Padano cheese).

The milk is semi-skimmed with a natural creaming process and then poured into traditional double-bottom copper cauldrons with a maximum capacity to make two cheeses. Natural whey is then added to the milk.

This starter is made up of a natural culture of lactic ferments that grow in the whey produced by the initial dairy process. The inoculated milk is heated to 31 - 33° C, and rennet added in order to promote curdling.

The curd is broken and cooked between 53 and 56° C whilst being constantly stirred. After heating, the grains of curd settle at the bottom of the cauldron where they clot. Then they are kept under the whey at a stable temperature for 30 - 70 minutes.

The clotted mass is left to sit at the bottom of the cauldron for 45 - 60 minutes so that it solidifies. The cheese is then removed from the cauldron and moulded. These processes are still carried out manually with traditional techniques and have an extremely tight time schedule.

When the time comes, the workers lift the cheese from the cauldron with a shovel and a cloth ("schiavino") and then divide it into two equal parts - called "twin cheeses" - each of which is wrapped in a hemp or jute cloth and placed on a bench, or



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"spersore".

Both these freshly-made cheeses are put into a "fascera". This mould was traditionally made of wood, but today is made of Teflon; it is tightened and pressed by a heavy disk, also in Teflon, so that the whey is drained and the cheese sets in its traditional round shape.

About eight hours after the cheese has been put into the mould, a strip of plastic is inserted between the "fascera" and the side of the cheese in order to emboss it with its marks of origin, i.e. the four-leaf clover, the dairy's serial number, the province code, and its month of production. This mould also contains Grana Padano's characteristic diamond-shapes, which are stamped across the entire surface of the rind.

After about 24 hours, the Teflon mould is replaced with a slightly curved steel one peppered with tiny holes so that the cheese can take its definitive shape.

Two days after production, the cheese is its traditional cylindrical shape, and it is now ready to be immersed in salt brine. The length of this process varies from 16 to 25 days according to the saline solution, the size of the cheese, and the level of salting required.

After the cheeses have been salted they are left to dry in a suitable environment and then transferred to the warehouse for ripening.

After the salting process, the cheeses are taken to the "hot chamber" or "locale di stufatura" where they are left to dry for several hours. Then, they are taken to the warehouse where they left to ripen. The cheeses are ripened in well-insulated environments with sophisticated systems that regulate the temperature, humidity and ventilation.

Grana Padano is left to ripen for long periods, during which time it undergoes a range of physical, chemical and microbiological changes that affect its organoleptic properties. While they are being ripened, the cheeses are inspected, cleaned and turned every 15 days. These processes were traditionally done by hand, but today are carried out by automatic brushing and turning machines.

When the time is right, Grana Padano cheese is checked with traditional tools – a "martelletto" (hammer), an "ago" (needle), and a "sonda" (plugger). If a more thorough check is needed, the cheese is split.

This small, finely-balanced steel hammer is an irreplaceable tool for checking the cheese, a process which only a select few can carry out. Tapping the surface reveals any irregular holes, called "occhiature" within the cheese, or any cracks in the structure, which are caused by improper fermentation.

This long, coiled needle is inserted into the cheese in order to check its aroma and flavour.



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	<p>These simple, traditional checks do not damage the product in any way; however, if an expert wants to be completely sure of the cheese's quality, a plugger is used to take a small sample, about half a centimetre in diameter and 7 - 8 cm in length. This test reveals the colour, scent and elasticity of the cheese and discovers any faults, such as irregular holes or splitting.</p>
<i>TYPICAL CHARACTERISTICS OF PRODUCT</i>	<ul style="list-style-type: none"> - Shape: cylindrical, slightly convex or almost straight sides, flat faces with a thin rind; - Sizes: 35 to 45 cm in diameter; the sides range from 15 to 18 cm in height, which may vary in accordance with the conditions and production techniques; - Weight: 24 to 40 kg per cheese wheel. Minimum cheese wheel weight is 24 kg.; - External appearance: dark colour, slightly oily; - Structure colour: white or straw yellow. - Typical aroma and flavour: fragrant, delicate; - Structure: fine, grainy, radial fracture into slivers; - Holes: just visible; - Rind thickness: 4 to 8 mm; - Ripening: the cheese is ripened by storing it in a natural environment at 15°C to 22°C;
<i>PRODUCTION AREA</i>	<p>It includes the wide area of the valley of Po river, as specified by the following provinces of Alessandria, Asti, Cuneo, Novara, Torino, Vercelli, Bergamo, Brescia, Como, Cremona, Mantova to the left of the River Po, Milan, Pavia, Sondrio, Varese, Trento, Padova, Rovigo, Treviso, Venice, Verona, Vicenza, Bologna to the right of the River Reno, Ferrara, Forlì, Piacenza and Ravenna.</p>
<i>SHELF LIFE</i>	180 days from date of delivery/date of issue of delivery note (for packed product only)
<i>CARRIAGE CONDITION</i>	With refrigerant vehicle at the temperature from +4°C to +8°C
<i>PALLET SYSTEM</i>	EPAL 80 cm x 120 cm
<i>STORAGE CONDITION</i>	In refrigerant store at the temperature from +4°C to +8°C
<i>PRESERVATION CONDITION</i>	Keep in a cold place at the temperature from +4°C to +8°C
<i>CUSTOM CODE</i>	04069061



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TYPES OF FORMAT (both for cheese aged 17 months and cheese aged 10/11 months)

SELLING FORMAT (net weight)	TYPE OF PACKING
Wheel – about 38 Kg.	Not packed
1/4 of a wheel – about 9 Kg.	Vacuum plastic bag
1/8 of a wheel – about 4,5 Kg.	Vacuum plastic bag
1/16 of a wheel – about 2,3 Kg.	Vacuum plastic bag
1/32 – 1/36 of a wheel – about 1,2 Kg.	Vacuum plastic bag
700 grams – random weight packaging	Vacuum plastic bag
500 grams – random weight packaging	Vacuum plastic bag
350 grams – random weight packaging	Vacuum plastic bag

TYPES OF FORMAT AND PALLET (both for cheese aged 16 months and cheese aged 10/11 months)

SELLING FORMAT (net weight)	Wheel	1/4 of a wheel	1/8 of a wheel	1/16 of a wheel
<i>EAN code</i>	-			
<i>Items/carton</i>	1	2	4	8
<i>Cartons/layer</i>	5	5	5	5
<i>Layers/pallet</i>	5	6	6	6
<i>Cartons/pallet</i>	25	30	30	30

SELLING FORMAT (net weight)	1/32 – 1/36 of a wheel	700 grams	500 grams	350 grams
<i>EAN code</i>				
<i>Items/carton</i>	18 - 20	30 - 15	45 - 25	60 - 30 - 15
<i>Cartons/layer</i>	6 - 6	6 - 10	6 - 10	6 - 11 - 10
<i>Layers/pallet</i>	5 - 5	5 - 5	5 - 5	5 - 5 - 10
<i>Cartons/pallet</i>	30 - 30	30 - 50	30 - 50	30 - 50 - 100



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PHYSICAL AND CHEMICAL COMPOSITION (average values for 100 grams of product)

COMPOUND	VALUE
Water	32,0 g
Fat	28,0 g
Proteins	33,0 g
Aminoacids	6,0 g
Acidi linoleici coniugati	0,17 g
Carbohydrates	none
Calcium	1,165 g
Phosphorus	0,692 g
Calcium/phosphorus ratio	1,7
Salt	1,6 g
Potassium	0,120 g
Magnesium	0,063 g
Zinc	0,011 g
Iron	140,0 µg
Copper	500,0 µg
Selenium	12,0 µg
Iodine	35,5 µg
Vitamin A	224,0 µg
Vitamin B1	17,0 µg
Vitamin B2	360,0 µg
Vitamin B6	117,0 µg
Vitamin B12	3,0 µg
Vitamin D3	0,5 µg
Vitamin PP	3,0 µg
Vitamin E	206,0 µg
Pantothenic acid	246,0 µg
Choline	0,02 g
Biothin	6,0 µg
Fat on dry matter	minimum 32%
Energy value (1 Kcal = 4,1868 Kj)	384 kcal – 1.606 kj