

REFERENCE- MATERIALS

Catalogue

March 2022



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Trust is good – control is better

In the context of quality assurance in applied food analysis, the question always arises of how close a test result is to the “true value”. It is essential to clarify this question and to examine it continuously. This is the only way to evidence your skills and secure the trust of your customers.

Guaranteed correct results with our reference material

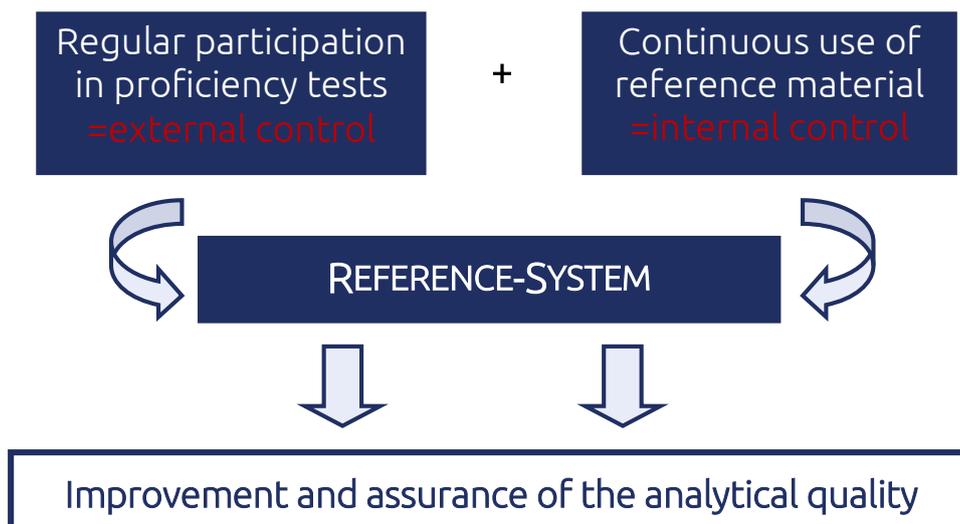
We at muva kempten GmbH have many years of experience in characterizing and dealing with reference material, work in numerous national and international working groups, and have long been familiar with quality management in the laboratory and analytical quality assurance. With over 170 employees, we have outstanding expertise in analytics and related issues. In addition, we are accredited by the German Accreditation Service (DAkkS) as a test laboratory according to DIN EN ISO / IEC 17025: 2018-03 and as a provider of international proficiency tests according to DIN EN ISO/IEC 17043:2010-05.

We can provide you with reference material according to your needs, therefore we differentiate between chemical-physical, microbiological, and sensory reference materials.

Integral quality assurance

In addition to the use of reference material, regular participation in proficiency tests is essential for any high-quality laboratory. With us, you get a complete service package consisting of reference materials, proficiency tests, seminars, in-house training courses, and additional competent support and advice from our in-house accredited laboratory.

Using these tools, it can be ensured that there is a high probability that analytical results are correct, that means they are close to the true value. In addition, complete and plausible documentation of the analysis accuracy is possible and thus provides the greatest possible security, which can also be presented to customers and certification bodies.



Our reference materials

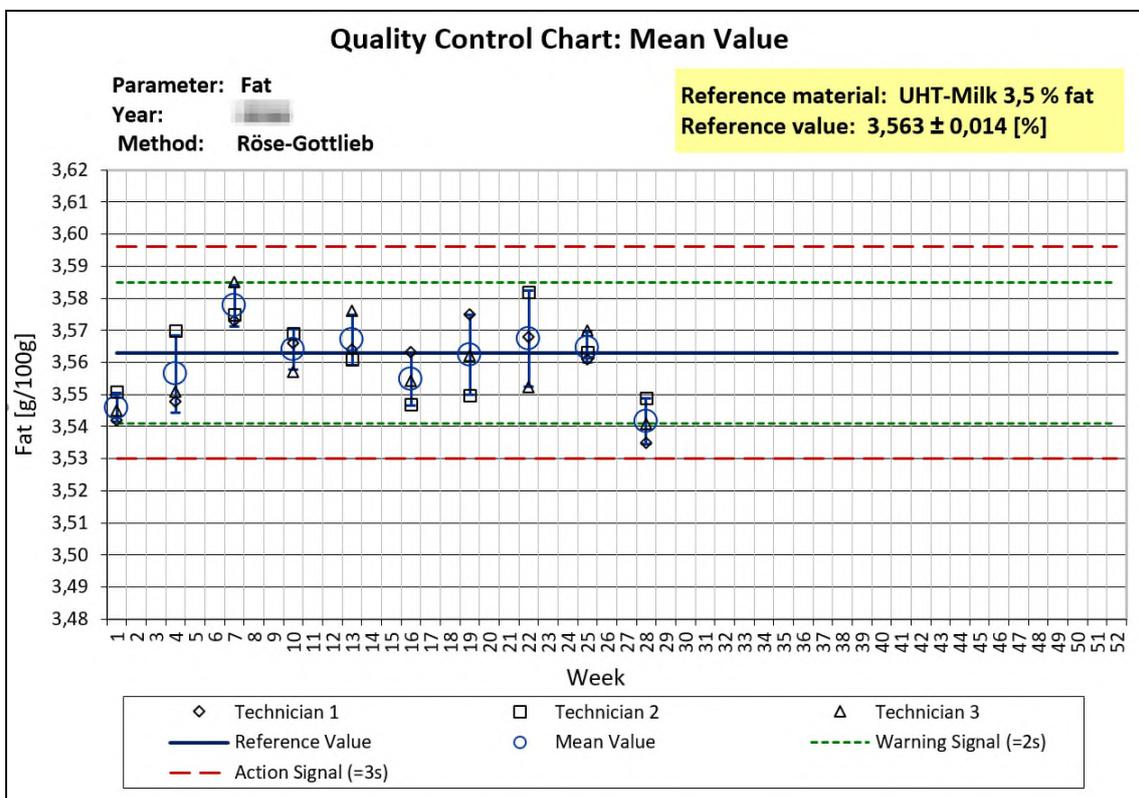
The reference materials from muva kempten GmbH are produced in accordance with the currently valid international guidelines (e.g. DIN EN ISO 17034) and stands out by their high quality.

- ▶ The reference values for the various parameters are based on extensive data sets that have often been determined in several laboratory comparison tests. This ensures that the values are highly reliable.
- ▶ The homogeneity of the material with regard to all parameters are examined in our accredited laboratory.
- ▶ The reference materials are designed primarily for long-term stability. During the storage period, they are regularly monitored for stability by our accredited laboratory.
- ▶ You will receive a clear and informative data sheet for each reference material.

Applications of the reference materials

Through the continuous monitoring of the chem.-phys. and microbiological analysis, quality control charts can be created. In addition to the regular control of the analytical reproducibility, errors, trends and systematic deviations can be seen at a glance and can therefore be quickly and effectively rectified. Furthermore, reference material can be used for:

- ▶ Optimization of analytical processes
- ▶ Research into the causes of inconsistencies in the analysis
- ▶ Training und monitoring of the staff
- ▶ Estimation of the measurement uncertainty
- ▶ Calibration of analysis equipment
- ▶ Validation of methods



Chemical-physical analyses

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
UHT MILK						
muva-M-0148	UHT Milk Skimmed Milk (sterilized) Best before: 05/2022	Fat	g/100g	0,067	250 ml	29,05
		Dry matter	g/100g	9,36		
		Protein	g/100g	3,681		
		Lactose (monohydrate)	g/100g	4,741		
		Freezing point	°C	-0,5128		
		pH-value	/	6,60		
		Density	g/ml	1,0343		
muva-M-0150	UHT Milk 3,5 % Fat Best before: 10/2022	Fat	g/100g	3,562	500 ml	29,05
		Dry matter	g/100g	12,54		
		Protein	g/100g	3,429		
		Lactose (monohydrate)	g/100g	4,723		
		Freezing point	°C	-0,5225		
		Density	g/ml	1,0313		
NEW muva-M-0151	UHT Milk 1,5% Fat Best before 05/2023	Fat	g/100g	1,469	250 ml	29,05
		Dry matter	g/100g	10,50		
		Protein	g/100g	3,575		
		Lactose (monohydrate)	g/100g	4,647		
		Freezing point	°C	-05068		
		Density	g/ml	1,0321		
UHT MILK (LOW IN LACTOSE, LACTOSE FREE)						
muva-ML-2314	UHT Milk (low in lactose) Best before: 05/2022	Lactose (monohydrate):		100 ml	31,15	
		HPLC	g/100g			0,199
		Enzym. (Gal.)	g/100g			0,452
		Enzym. (Glc.)	g/100g			0,313
		Galactose enzym.	g/100 g			2,14
		Glucose enzym.	g/100 g			2,20
muva-ML-2316 ❄️	UHT Milk (low in lactose) Best before: 03/2023	Lactose (monohydrate):		300 ml	31,15	
		HPLC	g/100g			0,206
		Enzym. (Gal.)	g/100g			0,371
		Enzym. (Glc.)	g/100g			0,293
		Galactose enzym.	g/100 g			2,10
		Glucose enzym.	g/100 g			2,19
muva-ML-2317 ❄️	UHT Milk (free of lactose) Best before: 07/2022	Lactose (monohydrate):		40 ml	31,15	
		HPLC	g/100g			0,003
		Enzym. (Gal.)	g/100g			0,052
		Enzym. (Glc.)	g/100g			0,032
		Galactose enzym.	g/100 g			2,36
		Glucose enzym.	g/100 g			2,40

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
ALKALINE PHOSPHATASE ACTIVITY IN MILK						
muva- MAP Currently not available, probably again in the 2 nd quarter of 2022	❄️ Pasteurised milk + raw milk (frozen)	Alkaline Phosphatase Activity	mU/l	about 1.000 – 2.000	5 ml	27,50
		RAW MILK				
muva- RO-0760	❄️ Raw milk (shock frozen) Best before: 12/2023	Fat	g/100g	4,338	40ml	26,15
		Dry matter	g/100g	13,16		
		Protein	g/100g	3,403		
		Lactose monohydrate	g/100g	-4,661		
		Freezing point	°C	-0,5206		
		pH-value	/	6,75		
		Casein	g/100g	2,695		
muva- RO-0761	❄️ Raw milk (shock frozen) Best before: 12/2023	Fat	g/100g	1,793	40ml	26,15
		Dry matter	g/100g	10,66		
		Protein	g/100g	3,331		
		Lactose monohydrate	g/100g	4,832		
		Freezing point	°C	-0,5243		
		pH-value	/	6,76		
		Casein	g/100g	2,64		
muva- RO-0762	❄️ Raw milk (shock frozen) Best before: 08/2024	Fat	g/100g	2,896	40ml	26,15
		Dry matter	g/100g	12,23		
		Protein	g/100g	3,787		
		Lactose monohydrate	g/100g	4,853		
		Freezing point	°C	-0,5197		
		pH-value	/	6,71		
		Urea	mg/l	146,7		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
FATTY ACID COMPOSITION IN RAW MILK						
muva-FM-2106	❄️ Fatty acid composition in raw milk (shock frozen) Best before: 09/2023	Butyric acid (C4:0)	g/100 g	3,36	40 ml	58,10
		Caproic acid (C6:0)	g/100 g	2,06		
		Caprylic acid (C8:0)	g/100 g	1,19		
		Capric acid (C10:0)	g/100 g	2,59		
		Lauric acid (C12:0)	g/100 g	3,05		
		Myristic acid (C14:0)	g/100 g	10,66		
		Myristoleic acid (C14:1)	g/100 g	0,93		
		Palmitic acid (C16:0)	g/100 g	28,65		
		Palmetoleic acid (C16:1 cis)	g/100g	1,79		
		Stearic acid (C18:0)	g/100 g	10,34		
		Oleic acid (C18:1 cis-9)	g/100 g	22,61		
		Elaidic acid (C18:1 total trans)	g/100 g	2,55		
		Linoleic acid (C18:2 all-cis-9,12)	g/100 g	1,32		
		C18:2 total trans	g/100g	0,8		
		Linolenic acid (C18:3 all-cis-9,12,15)	g/100 g	0,5		
Arachidic acid (C20:0)	g/100 g	0,15				
AFLATOXIN M1 IN RAW MILK						
muva-MA-2409	❄️ Aflatoxin M1 in raw milk (shock frozen) Best before: 08/2023	Aflatoxin M1	µg/kg	0,036	40 ml	28,55
muva-MA-2410	❄️ Aflatoxin M1 in raw milk (shock frozen) Best before: 08/2023	Aflatoxin M1	µg/kg	0,010	40 ml	28,55
VETERINARY DRUGS						
muva-TAZ-2701	❄️ Veterinary drugs in raw milk (shock frozen) Best before: 06/2022	Penicillin G		2,75	40 ml	68,65
		Cloxacillin		28,70		
		Ampicillin		4,10		
		Cefalexin	µg/kg	101,12		
		Cefoperazon		44,82		
		Sulfadimidin		110,72		
		Tetracyclin		110,46		
		Enrofloxacin		100,66		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price €**
muva-TAZ-2702 ❄️	Veterinary drugs in raw milk (shock frozen) Best before: 06/2022	Penicillin G		--		40 ml 68,65
		Cloxacillin		6,49		
		Ampicillin		--		
		Cefalexin	µg/kg	22,76		
		Cefoperazon		7,84		
		Sulfadimidin		20,98		
		Tetracyclin		21,28		
		Enrofloxacin		22,61		
NEW muva-TAM-2804 (qualitative) ❄️	Veterinary drugs in raw milk (shock frozen)	Penicillin G			40 ml 31,70	
		Cloxacillin				
		Ampicillin				
		Cefalexin	Content ca. 10% above MRL			
		Cefoperazon				
		Sulfadimidin				
		Tetracyclin				
		Enrofloxacin				
NEW muva-TAM-2805 (qualitative) ❄️	Veterinary drugs in raw milk (shock frozen)	Penicillin G			40 ml 31,70	
		Cloxacillin				
		Ampicillin				
		Cefalexin	Content ca. 10% above MRL			
		Cefoperazon				
		Sulfadimidin				
		Tetracyclin				
		Enrofloxacin				
MILK FOR POWDER PRODUCTION						
muva-PM-2901 ❄️	Base milk for powder production (shock frozen) Best before: 03/2023	Fat	g/100g	3,508	40ml 30,65	
		Dry matter	g/100g	13,00		
		Protein	g/100g	3,341		
		Lactose monohydrate	g/100g	5,361		
		pH-value	/	6,68		
EVAPORATED MILK / COFFEE CREAM						
muva-KM-0517	Evaporated milk 8 % Fat Best before: 07/2022	Fat	g/100g	8,12	170 g 28,55	
		Dry matter	g/100g	25,88		
		Protein	g/100g	6,12		
		Ash	g/100g	1,3		
		Phosphorus	mg/kg	1644		
muva-KM-0518	Coffee cream 10 % Fat Best before: 04/2023	Fat	g/100g	10,18	250 ml 28,55	
		Dry matter	g/100g	18,35		
		Protein	g/100g	3,14		
		Ash	g/100g	0,67		
		Phosphorus	mg/kg	882		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
muva-KM-0519	Evaporated milk 4 % Fat Best before: 04/2025	Fat	g/100g	4,09	170 g	28,55
		Dry matter	g/100g	24,31		
		Protein	g/100g	7,09		
		Ash	g/100g	1,49		
		Phosphorus	mg/kg	2050		
YOGHURT						
muva-JO-1427	Yoghurt 1,8% Fat Best before: 11/2022	Fat	g/100g	1,81	500 g	28,55
		Dry matter	g/100g	11,81		
		Protein	g/100g	4,72		
muva-JO-1428	Yoghurt 3,8 % Fat Best before: 11/2022	Fat	g/100g	3,83	500 g	28,55
		Dry matter	g/100g	13,44		
		Protein	g/100g	4,54		
UHT CREAM						
muva-R-0441	UHT Cream 30 % Fat Best before: 05/2022	Fat	g/100g	30,38	ca. 100 ml	25,90
		Dry matter	g/100g	37,08		
		Protein	g/100g	2,45		
muva-R-0442	UHT Cream 35 % Fat Best before: 05/2022	Fat	g/100g	35,34	ca. 100 ml	25,90
		Dry matter	g/100g	41,65		
		Protein	g/100g	2,26		
muva-R-0443	UHT Cream 30 % Fat Best before: 03/2023	Fat	g/100g	30,12	ca. 100 ml	25,90
		Dry matter	g/100g	36,53		
		Protein	g/100g	2,41		
muva-R-0444	UHT Cream 15 % Fat Best before: 03/2023	Fat	g/100g	14,93	ca. 100 ml	25,90
		Dry matter	g/100g	22,81		
		Protein	g/100g	3,03		
BUTTER						
muva-BU-1311	 Mildly soured butter Best before: 06/2022	Solids non-fat	g/100g	1,59	250 g	30,65
		Water	g/100g	15,43		
		Cholesterol	mg/kg	2295		
		Butyric acid methyl ester	g/100g	3,85		
		Milk fat	g/100g	82,22		
muva-BU-1314	 Sweet cream butter salted Best before: 12/2022	Solids non-fat	g/100g	2,73	250 g	30,65
		Water	g/100g	16,25		
		pH-value	/	6,48		
		Cholesterol	mg/kg	2203		
		Chloride	mg/100 g	828		
		Sodium chloride (via Chloride)	g/100g	1,36		
muva-BU-1315	 Sweet cream butter Best before: 12/2024	Solids non-fat	g/100g	1,58	250 g	30,65
		Water	g/100g	15,64		
		pH-value	/	6,75		
		Cholesterol	mg/kg	2160		
		Butyric acid methyl ester	g/100g	3,83		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
PROCESSED CHEESE						
muva-SK-0319	Processed cheese 45 % f.i.d.m. Best before: 4 weeks after shipment	Fat	g/100g	20,31	250 g	38,05
		Dry matter	g/100g	42,25		
		Protein	g/100g	14,94		
		Lactose (monohydrate)	g/100g	2,03		
		Ash	g/100g	3,9		
		pH-value	/	5,9		
		Citronic acid	mg/100 g	104,3		
		Chloride	mg/100 g	553		
		Sodium chloride (via Chloride)	g/100g	0,91		
		Sodium	mg/100 g	932		
		Sodium chloride (via Sodium)	g/100g	2,37		
		Total phosphorus	g/100g	0,79		
muva-SK-0320	Processed cheese 55 % f.i.d.m. Best before: 4 weeks after shipment	Fat	g/100 g	24,75	250 g	38,05
		Dry matter	g/100 g	44,24		
		Protein N x 6,38	g/100 g	12,29		
		Lactose (monohydrate)	g/100 g	2,66		
		Ash	g/100g	3,54		
		pH-value	/	5,85		
		Citronic acid	mg/100 g	112,7		
		Chloride	mg/100 g	315		
		Sodium chloride via Chloride	g/100g	0,52		
		Sodium	mg/100 g	810		
		Sodium chloride (via Sodium)	g/100g	2,06		
		Total phosphorus	g/100g	0,78		
muva-SK-0321	Processed cheese 40 % f.i.d.m. Best before: 4 weeks after shipment	Fat	g/100 g	13,30	250 g	38,05
		Dry matter	g/100 g	35,30		
		Protein N x 6,38	g/100 g	16,32		
		Lactose (monohydrate)	g/100 g	0,48		
		Ash	g/100g	3,91		
		pH-value	/	5,61		
		Citronic acid	mg/100 g	70,5		
		Chloride	mg/100 g	507		
		Sodium chloride via Chloride	g/100g	0,84		
		Sodium	mg/100 g	894		
		Sodium chloride (via Sodium)	g/100g	2,27		
		Total phosphorus	g/100g	0,85		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
muva-SK-0322	Processed cheese 45 % f.i.d.m.	Fat	g/100 g	19,10	250 g	38,05
		Dry matter	g/100 g	41,79		
	Best before: 4 weeks after shipment	Protein N x 6,38	g/100 g	16,65		
		Lactose (monohydrate)	g/100 g	0,78		
		Ash	g/100g	3,96		
		pH-value	/	5,67		
		Citronic acid	mg/100 g	118		
		Chloride	mg/100 g	476		
		Sodium chloride via Chloride	g/100g	0,78		
		Sodium	mg/100 g	903		
		Sodium chloride (via Sodium)	g/100g	2,29		
		Total phosphorus	g/100g	0,86		
CREAM CHEESE						
muva-FK-1230	Cream cheese 30 % f.i.d.m.	Fat	g/100g	5,74	200 g	30,65
		Dry matter	g/100g	21,85		
	Best before: 05/2022	Protein	g/100g	9,63		
		Lactose	g/100g	2,94		
		Milk acid	mg/100 g	526		
		pH-value	/	4,59		
		Chloride	mg/100 g	381		
		Sodium chloride (via Chloride)	g/100g	0,63		
muva-FK-1232	Cream cheese 50 % f.i.d.m.	Fat	g/100g	13,72	200 g	30,65
		Dry matter	g/100g	25,94		
	Best before: 02/2023	Protein	g/100g	6,88		
		Lactose	g/100g	2,9		
		Milk acid	mg/100 g	524		
		pH-value	/	4,55		
		Chloride	mg/100 g	451		
		Sodium chloride (via Chloride)	g/100g	0,74		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
HARD CHEESE						
muva- HA-1515	❄️ Hard cheese Type Emmentaler Best before: 4 weeks after shipment	Fat	g/100g	28,34	100 g	32,25
		Dry matter	g/100g	63,69		
		Protein	g/100g	28,92		
		pH-value	/	5,52		
		Chloride	mg/100g	376		
		Sodium chloride (via Chloride)	g/100g	0,62		
		Sodium	mg/100g	233		
		Sodium chloride (via Sodium)	g/100g	0,59		
SEMI HARD CHEESE						
muva- K-1803	❄️ Semi hard cheese Type Gouda Best before: 4 weeks after shipment	Fat	g/100g	26,73	100 g	32,25
		Dry matter	g/100g	58,1		
		Protein	g/100g	23,04		
		pH-value	/	5,21		
		Chloride	mg/100g	1364		
		Sodium chloride (via Chloride)	g/100g	2,25		
ALKALINE PHOSPHATASE - CHEESE						
muva- HAP-2505	Hard Cheese Type Emmentaler (freeze-dried) Best before: 10/2024	Alkaline Phosphatase Activity	mU/g	763	ca. 5 g	27,50
MILK POWDER						
muva- MP-0219	Skimmed milk powder spray dried Best before 12/2025	Fat	g/100g	0,74	80 g	33,30
		Dry matter	g/100g	96,51		
		Protein	g/100g	35,12		
		Lactose (monohydrate)	g/100g	52,39		
		Ash	g/100g	7,86		
		pH-value	/	6,54		
muva- MP-0220	Skimmed milk powder spray dried (Lactose free) Best before 06/2026	Fat	g/100g	1,26	80 g	33,30
		Protein	g/100g	35,75		
		Lactose (monohydrate)	g/100g	0,049		
		Ash	g/100g	7,66		
		pH-value	/	6,57		
muva- MP-0221	Whole milk powder roller dried Best before: 10/2027	Fat	g/100g	25,75	80 g	33,30
		Freies Fat	g/100g	20,07		
		Dry matter	g/100g	97,22		
		Protein	g/100g	24,22		
		Lactose (monohydrate)	g/100g	40,55		
		Ash	g/100g	5,92		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
muva- MP-0222	Fat reduced milk powder spray dried Best before: 10/2027	Fat	g/100g	13,36	80 g	33,30
		Freies Fat	g/100g	3,83		
		Dry matter	g/100g	96,27		
		Protein	g/100g	30,97		
		Lactose (monohydrate)	g/100g	45,12		
		Ash	g/100g	6,77		
muva- MP-0223	Whole milk powder spray dried Best before 10/2027	Fat	g/100g	26,38	80 g	33,30
		Dry matter	g/100g	96,79		
		Protein	g/100g	27,10		
		Lactose (monohydrate)	g/100g	37,36		
		Ash	g/100g	5,66		
		pH-value	/	6,66		
muva- MP-0224	Cream powder roller dried Best before 10/2027	Fat	g/100g	42,25	80 g	33,30
		Dry matter	g/100g	98,10		
		Protein	g/100g	19,26		
		Lactose (monohydrate)	g/100g	30,92		
		Ash	g/100g	4,43		
		pH-value	/	6,69		
FATTY ACID COMPOSITION IN MILK POWDER						
<i>NEW</i> muva- FM-2107	Fatty acid composition In milk powder Best before: 10/2027	Butyric acid (C4:0)	g/100 g	3,66	40 ml	58,10
		Caproic acid (C6:0)	g/100 g	2,25		
		Caprylic acid (C8:0)	g/100 g	1,32		
		Capric acid (C10:0)	g/100 g	3,05		
		Lauric acid (C12:0)	g/100 g	3,39		
		Myristic acid (C14:0)	g/100 g	11,57		
		Myristoleic acid (C14:1)	g/100 g	1,00		
		Palmitic acid (C16:0)	g/100 g	29,49		
		Palmetoleic acid (C16:1 cis)	g/100g	1,57		
		Stearic acid (C18:0)	g/100 g	9,73		
		Oleic acid (C18:1 cis-9)	g/100 g	20,33		
		Linoleic acid (C18:2 all-cis-9,12)	g/100 g	1,55		
		C18:2 total trans	g/100g	1,00		
		Linolenic acid (C18:3 all-cis-9,12,15)	g/100 g	0,62		
		Arachidic acid (C20:0)	g/100 g	0,14		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
WHEY POWDER						
muva- MO-0615	Whey powder Best before: 10/2023	Fat	g/100g	0,87	80 g	35,80
		Dry matter (87 °C)	g/100g	98,47		
		Dry matter (102 °C)	g/100g	98,15		
		Protein	g/100g	11,95		
		Lactose (monohydrate)	g/100g	74,36		
		Ash	g/100g	7,33		
		Calcium	mg/kg	4989		
		Magnesium	mg/kg	1101		
		Nitrate	mg/kg	37,9		
		NPN	g/100g	2,9		
		Total lactic acid	mg/100g	227,5		
muva- MO-0616	Whey powder Best before: 05/2024	Fat	g/100g	2,58	80 g	35,80
		Dry matter (87 °C)	g/100g	96,04		
		Dry matter (102 °C)	g/100g	95,83		
		Protein	g/100g	35,55		
		Lactose (monohydrate)	g/100g	49,35		
		Ash	g/100g	6,34		
		Calcium	mg/kg	4998		
		Magnesium	mg/kg	964		
		Nitrate	mg/kg	20,4		
		NPN	g/100g	2,96		
		Total lactic acid	mg/100g	313,2		
WHEY PROTEIN CONCENTRATE						
muva- MPK-0905	Whey protein concentrate Best before: 10/2025	Fat	g/100g	4,9	80 g	31,70
		Water	g/100g	3,66		
		Protein	g/100g	65,76		
		Lactose (monohydrate)	g/100g	19,07		
		Ash	g/100g	4,05		
muva- MPK-0907	Whey protein concentrate Best before: 05/2026	Fat	g/100g	5,92	80 g	31,70
		Water	g/100g	4,42		
		Protein	g/100g	77,53		
		Lactose (monohydrate)	g/100g	6,4		
		Ash	g/100g	3,19		
SODIUM-CASEINATE						
muva- CA-0908	Sodium-caseinate Best before: 01/2028	Fat	g/100g	0,8	80 g	31,70
		Water	g/100g	5,43		
		Protein	g/100g	91,09		
		Lactose (monohydrate)	g/100g	0,07		
		Ash	g/100g	3,48		

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
CARBOHYDRATES / VITAMINS						
muva-KI Currently not available, probably again in the 2 nd quarter of 2022	Carbohydrates / vitamins Infant food (powder)	Glucose	g/100g		80 g	40,15
		Fructose	g/100g			
		Lactose (monohydrate)	g/100g			
		Saccharose	g/100g			
		Vitamin A	µg/100g			
		Vitamin C	mg/100g			
		Vitamin E	mg/100g			
MINERALS / TRACE ELEMENTS						
muva-NEM-1608	Minerals / trace elements Infant food (powder) Best before: 04/2025	Sodium	mg/kg	1443	80 g	43,30
		Kalium	mg/kg	6918		
		Calcium	mg/kg	5131		
		Magnesium	mg/kg	919,6		
		Iron	mg/kg	28,4		
		Zinc	mg/kg	21,4		
		Phosphorus	mg/kg	4455		
		Copper	mg/kg	2,52		
		Manganese	mg/kg	12,16		
		Chloride	mg/kg	2788		
muva-NEM-1609	Minerals / trace elements Infant food (powder) Best before: 04/2025	Sodium	mg/kg	1446	80 g	43,30
		Kalium	mg/kg	6241		
		Calcium	mg/kg	5006		
		Magnesium	mg/kg	549,5		
		Iron	mg/kg	18,5		
		Zinc	mg/kg	12,3		
		Phosphorus	mg/kg	3221		
		Copper	mg/kg	1,38		
		Manganese	mg/kg	2,41		
		Chloride	mg/kg	2900		
MILK POWDER WITH DEFINED CONTENT OF RENNET WHEY POWDER						
muva-GMP-2601	Milk powder with defined content of rennet whey powder	Content of rennet whey powder	g/100g	5,63	ca. 25 g	42,25
		Best before: 04/2023				
muva-GMP-2602	Milk powder with defined content of rennet whey powder	Content of rennet whey powder	g/100g	1,07	ca. 25 g	42,25
		Best before: 04/2023				

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price € **
FRUIT JUICE						
muva- FS-1918	Grape juice Best before: 05/2022	Glucose	g/l	77,56	200 ml	32,75
		Fructose	g/l	82,75		
		Titratable acid	mmol H ⁺ /l	85,48		
		pH-value	/	3,45		
		Soluble solids	°Brix	17,05		
muva- FS-1919	Apple juice Best before: 05/2022	Glucose	g/l	22,11	150 ml	32,75
		Fructose	g/l	64,23		
		Titratable acid	mmol H ⁺ /l	70,2		
		pH-value	/	3,66		
		Ethanol	mg/l	431,1		
		Soluble solids	°Brix	12,2		
CHOCOLATE						
muva- S-0819	Nougat Best before: 03/2024	Fat	g/100g	35,3	100 g	48,60
		Dry matter	g/100g	99,67		
		Protein	g/100g	7,61		
		Lactose (monohydrate)	g/100g	0,199		
		Saccharose	g/100g	49,28		
		Theobromine	mg/kg	784		
muva- S Currently not available, probably again in the 2 nd quarter of 2022	Whole milk chocolate	Fat	g/100g	35,3	100 g	48,60
		Dry matter	g/100g	99,67		
		Protein	g/100g	7,61		
		Lactose (monohydrate)	g/100g	0,199		
		Saccharose	g/100g	49,28		
		Theobromine	mg/kg	784		
TINNED SAUSAGE						
muva- BR- Currently not available, probably again in the 2 nd quarter of 2022	Canned sausage Best before:	Fat	g/100 g		125 g	41,20
		Water	g/100 g			
		Protein (N x 6,25)	g/100 g			
		Chloride	mg/100 g			
		Sodium chloride (via Chloride)	g/100 g			
		Sodium	mg/100 g			
		Sodium chloride (via Sodium)	g/100 g			
		Ash	g/100 g			
		Hydroxyproline	g/100 g			
		Nitrate (NO ₃)	mg/kg			
		Total Phosphorus (P)	mg/100 g			

* None of the reference materials are suitable for consumption!

** Prices do not include VAT

Microbiological analysis

All microorganisms belong to risk group S1

Code	Material*	Parameter	Unit	Reference value	Packaging unit	Price €**
BACTERIAL COUNT						
muva-MBK-1719	Quarkpulver Best before: 06/2022	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/g	2,95	40 g	24,30
muva-MBK-1720	Hard Cheese (freeze-dried) Best before: 08/2022	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/g	7,32	40 g	24,30
muva-MBK-1721	Hard Cheese (freeze-dried) Best before: 06/2022	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/g	6,34	40 g	24,30
muva-GKZ-1715 ❄️	Milk Best before: 04/2022	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/ml	4,58	30 ml	31,70
muva-GKZ-1716 ❄️	Milk Best before: 04/2022	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/ml	5,51	30 ml	31,70
E. COLI / ENTEROBACTERIACEAE / COLIFORME						
muva-ECE- ❄️	Milk	E. Coli		3,66		
		Enterobacteriaceae		4,29		
			log ₁₀ cfu/ml		30 ml	37,00
		Coliforms		4,47		
YEAST / GEOTRICHUM						
muva-HS-1719 ❄️	Milk Best before: 06/2022	Yeast	log ₁₀ cfu/ml	3,86	30 ml	39,10
muva-HS-1720 ❄️	Milk Best before: 06/2022	Yeast	log ₁₀ cfu/ml	4,84	30 ml	39,10
STAPHYLOCOCCUS						
muva-ST-1713 ❄️	Milk Best before: 12/2022	Staphylococcus	log ₁₀ cfu/ml	4,38	30 ml	34,90
muva-ST-1714 ❄️	Milk Best before: 12/2022	Staphylococcus	log ₁₀ cfu/ml	5,33	30 ml	34,90

* None of the reference materials are suitable for consumption!

** Prices do not include VAT.

Sensory Analyses

Code	Material*	Parameter	Number of Packs	Packungseinheit	Preis € **
SENSORY RANK ORDER					
muva- SeRF-28	Pineapple juice Best before: 06/2022	bitter	4 samples	4x 200 ml	53,90
muva- SeRF-24	Canned sausage Lyoner Best before: 06/2022	sweet	4 samples	4 x 200 g	53,90
muva- SeRF-29	Water Best before: 06/2022	salty	4 samples	4x 30 ml	53,90
muva- SeRF-34	Processed cheese Best before: 05/2022	sweet	4 samples	4x 250 g	53,90
muva- SeRF-37	Yoghurt drink strawberry Best before: 06/2022	salty	4 samples	1x 235 ml	53,90
SENSORY TRIANGLE TEST					
muva- SeD-12	Canned sausage Lyoner Best before: 06/2022	garlic	3 samples	3x 200 g	41,20
muva- SeD-15	Canned sausage Lyoner Best before: 06/2022	lemon	3 samples	3x 200 g	41,20
SENSORY FATS & OILS					
muva- SeO-04	rapeseed oil MHD 06/2022	deficient	1 sample	100 ml	25,90
muva- SeO-15	deep frying fat MHD 06/2022	deficient	1 sample	30 ml	25,90

* We offer other materials (milk, milk powder, etc.) on request.

** Prices do not include VAT.

Sensory Training Material

- ▶ Individual
- ▶ Multiple-use
- ▶ Conforms to standards
- ▶ Convenient storage
- ▶ Minimal preparation work



Sensory testing focuses on the human being as a "measuring instrument" with his or her sensory abilities. In compliance with DIN EN ISO 8586 / DIN ISO 22935-1, these must be maintained and retrained in order to achieve continuously comparable and repeatable results - especially within a group of assessors.

Our sensory training kit contains all working materials and utensils including exercises for the Internal training of your staff. You can start immediately in compliance with the standards and carry out exercises to train the senses of taste, smell, touch, and sight.

For this purpose, we are constantly developing new sniffing sticks for identifying and describing odours, haptic tests with different degrees of firmness, and colour tubes with different intensities and shades. Our training materials help you in the selection of suitable test persons, within your internal trainings and as an aid in daily quality control.

You can order the complete training set or choose from different training materials depending on your training needs.

More information about the training and flavour selection at www.muva.de ([order from sensory training material](#))

Material	Parameter	Samples	Price* €
Sniffing Sticks ^{1) 2)}	Within the aroma-sets you can choose ten different flavours freely.	10 sticks incl. storage case	89,00
Sniffing Sticks ^{1) 2)}	refill-set	10 sticks without storage case	69,00
Basic tastes	sweet, sour, bitter, salty und umami	For the training of 5 persons 10 persons	55,00 100,00
Threshold test	basic taste of your choice	For the training of 10 persons 20 persons	55,00 100,00
Colour sequences ²⁾	wet medium: red, yellow, green dry medium: graphite	10 th ranking for → wet medium → dry medium	69,00 79,00
haptic test ²⁾	haptic test (10 th ranking) based on siliocone with different levels of firmness Long lasting durability!		120,00
Large training case	Contains: basic tastes, threshold test, triangular odour / taste test, taste ranking, further taste exercises, colour ranking and sniffing sticks.	Complete set	789,00

* Prices do not include VAT

¹⁾ When ordering individual sticks outside of the set of 10, a stick will be charged € 6.90

2) The listed prices for the threshold test include one basic flavour

Sensory Test Kit “Drinking Water”

For personnel sampling drinking water acc. to DIN EN 1622

The Sensory Test kit „Drinking Water“ is suitable for proofing, assuring, and training the sensory skills of the panelists as well as for documentation of the performance.

Two sets of each 5 testing samples are packed in a functional and stable case:

- ▶ Set for **visual testing** consisting of 5 tubes with different attributes. (turbidity, particles, discolorations, etc.)

- ▶ Set for **odour testing** consisting of 5 aroma sticks with different flavours from the drinking water sector.

Of course as head of the panel, you will obtain a data sheet including the relevant decoding. So you are able to evaluate and document the results in course of your quality assurance.

The sniffing stick shall remain sealed for approximately 10 minutes after testing and the test can be repeated as often as desired. If the material is stored refrigerated at 6 °C, it is stable for at least 5 months.

Material*	Parameter	Set	Price €**
Test kit drinking water case	5 different odours 5 different visual attributes	5 Prüfproben 5 Prüfproben	79,00
Refill package odour pens	5 different odours	5 Prüfproben	37,00
Refill package visual test	5 different visual attributes	5 Prüfproben	37,00
Single stick / Single test tube	1 odour or 1 visual attribute each	1 Prüfprobe	8,50

* None of the reference materials are suitable for consumption!

** Prices do not include VAT.

Your contact

Rebekka Wucher

Fon.: +49 (0) 831/5290-236

E-Mail: rebekka.wucher@muva.de



Terms of Payment and Transport

The delivery of the reference materials shall be ex-works [Incoterms@2010]

Our list prices are net prices plus the current VAT and delivery costs (charged according to time and effort). For deliveries abroad, higher delivery costs are to be expected.

Companies based in other EU countries that have provided us with their **EU VAT identification number** are not charged German VAT.

Please transfer the invoice amount **within 10 days** to the bank details mentioned on the bottom of the invoice.

The international bank transaction costs are 20.00 €. To decrease these bank transfer costs we recommend using our **international bank account (IBAN and BIC-Code)**. In this case, please deduct the 20.00 € for international money transfer that we might have claimed in our invoice.

Discount:

from 5 units:	5 %
from 10 units:	10 %
from 25 units:	15 %
from 50 units:	20 %

❄ The delivery condition for frozen material:

Frozen reference materials are delivered in frozen condition and separately from non-frozen products (express delivery). The data sheet contains precise instructions on how to thaw the material. There will be an additional charge for packaging costs (see table below). However, you have the option of returning the packaging to us. In this case, the packaging costs will be credited.

The shipment of frozen reference materials abroad may only be possible to a limited extent, as the material may thaw if delivery times are too long or outside temperatures are too high. **In this case, MUVA KEMPTEN GMBH assumes no liability.**

❄ Packaging Costs:

Package size	Number of bottles	Packaging materials	Packaging costs	Credit note for return delivery of packaging materials ²⁾
VP 1	Up to 12 bottles	Styroporbox + 7 TP ¹⁾	20,00 €	20,00 €
VP2	Up to 30 bottles	Styroporbox + 11 TP ¹⁾	35,00 €	35,00 €

¹⁾ TP = Thermal packs (cool packs)

²⁾ The credit note is reduced for 2.00 € for every not returned thermal pack

The last valid version of the general trading conditions of muva kempten GmbH apply in each case (www.muva.de).

muva kempton GmbH
Postfach 3254
D-87441 Kempten/Allgäu

Simone Nitzsche
Fon: +49 (0)831/5290233
Fax-Nr.: +49 (0) 831/5290197
E-Mail: ringref@muva.de



Order Form for Reference Materials

Order-No.:

Customer-No.:

Please send me the following materials in the following quantities (packaging units):

Desired quantity	Material	Remarks (e.g. frequency of regular delivery)*

*Delivery is possible at any time. We also offer weekly and monthly delivery

Company:		
Company:		
Street:		
Post(Zip) Code / City:		
Person to contact:		
Phone:		
Fax:		
E-mail:		
EU-VAT-Identification-No. (delivery into EU countries):		

The general terms of business drawn up by muva kempton GmbH apply at all times (www.muva.de)

(For EU countries outside germany: Benefits of muva kempton are accessed by using the EU-VAT-Identification-No. since 01.01.2010)

Date

Signature

muva kempton GmbH
Postfach 3254
D-87441 Kempten/Allgäu

Rebekka Wucher
Fon: +49 (0)831/5290 236
Fax-Nr.: +49 (0) 831/5290 197
E-Mail: rebekka.wucher@muva.de



Order Form – Drinking Water Testkit

Order-No.:

Customer-No.:

Please send me the following materials in the following quantities:

Desired quantity	Material	Set	Price	Remarks
	Test kit drinking watercase	5 different odours 5 different visual attributes	79,00 €	
	Refill package odour pens	5 different odours	37,00 €	
	Refill package visual Test	5 different visual attributes	37,00 €	
	Single stick / Single test tube	1 odour or 1 visual attribute each	8,50 €	

Company:		
Company:		
Street:		
Post(Zip) Code / City:		
Person to contact:		
Phone:		
Fax:		
E-mail:		
EU-VAT-Identification-No. (delivery into EU countries):		

The general terms of business drawn up by muva kempton GmbH apply at all times (www.muva.de)

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Date

Signature

muva kempton GmbH
Registered Office: Kempten / Local Court Kempten: HRB 13347
Managing Director: Dr. Monika Knödseder
Ignaz-Kiechle-Straße 20-22 · D-87437 Kempten (Allgäu)

Your contact person:
Rebekka Wucher
E-Mail: rebekka.wucher@muva.de Web:
www.muva.de

Phone:
+49 (0) 831/5290-236