

*We wish you a peaceful
holiday season and a happy
new year!*



REFERENCE- MATERIALS

Catalogue

December 2023



Table of Contents

TRUST IS GOOD – CONTROL IS BETTER4

GUARANTEED CORRECT RESULTS WITH OUR REFERENCE MATERIAL	4
INTEGRAL QUALITY ASSURANCE	4
OUR REFERENCE MATERIALS	5

NEWS6

NEW LAYOUT OF OUR WEBSITE	6
LIMITED QUANTITY LABELLING	6
NEW CONTACT PARTNER	6

CHEMICAL-PHYSICAL ANALYSES7

UHT MILK	7
UHT MILK (LOW IN LACTOSE, LACTOSE FREE)	7
RAW MILK	8
FATTY ACID COMPOSITION IN RAW MILK	8
AFLATOXIN M1 IN RAW MILK	9
VETERINARY DRUGS	9
MILK FOR POWDER PRODUCTION	9
EVAPORATED MILK / COFFEE CREAM	10
YOGHURT	10
UHT CREAM	11
BUTTER	11
PROCESSED CHEESE	12
CREAM CHEESE	13
HARD CHEESE	13
SEMI HARD CHEESE	13
ALKALINE PHOSPHATASE - CHEESE	14
MILK POWDER	14
FATTY ACID COMPOSITION IN MILK POWDER	15
WHEY POWDER	15
WHEY PROTEIN CONCENTRATE	16
SODIUM-CASEINATE	16
CARBOHYDRATES / VITAMINS	16

MINERALS / TRACE ELEMENTS	17
MILK POWDER WITH DEFINED CONTENT OF RENNET	
WHEY POWDER	17
PLANT DRINK (Oats/Soja)	18
VEGAN SPREAD CREAM	18
FRUIT JUICE	18
CHOCOLATE	19
CANNED SAUSAGE	19

MICROBIOLOGICAL ANALYSIS20

BACTERIAL COUNT	20
E. COLI / ENTEROBACTERIACEAE / COLIFORME	20
YEAST / GEOTRICHUM	20
STAPHYLOCOCCUS	20

SENSORY ANALYSES21

SENSORY RANK ORDER	21
SENSORY TRIANGLE TEST	21
SENSORY FATS & OILS	21
SENSORY ISO 22935	21

SENSORY TRAINING MATERIAL22

FOR DRINKING WATER SAMPLING ACCORDING TO DIN EN 1622	23
--	----

TERMS OF PAYMENT AND TRANSPORT24

DISCOUNT:	24
THE DELIVERY CONDITION FOR FROZEN MATERIAL:	24
PACKAGING COSTS:	24

ORDER FORM FOR25

REFERENCE MATERIALS25

ORDER FORM FOR26

DRINKING WATER TEST KIT26

Trust is good – control is better

In the context of quality assurance in applied food analysis, the question always arises how close is a test result 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

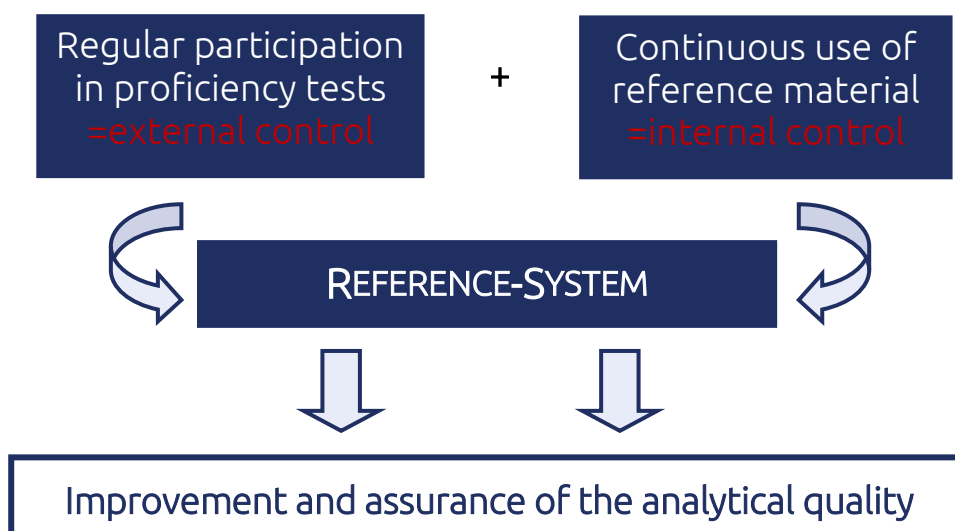
We at muva kempten GmbH have many years of experience in characterizing and dealing with reference material, work in numerous national and international working groups, and have long been familiar with quality management in the laboratory and analytical quality assurance. With over 170 employees, we 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

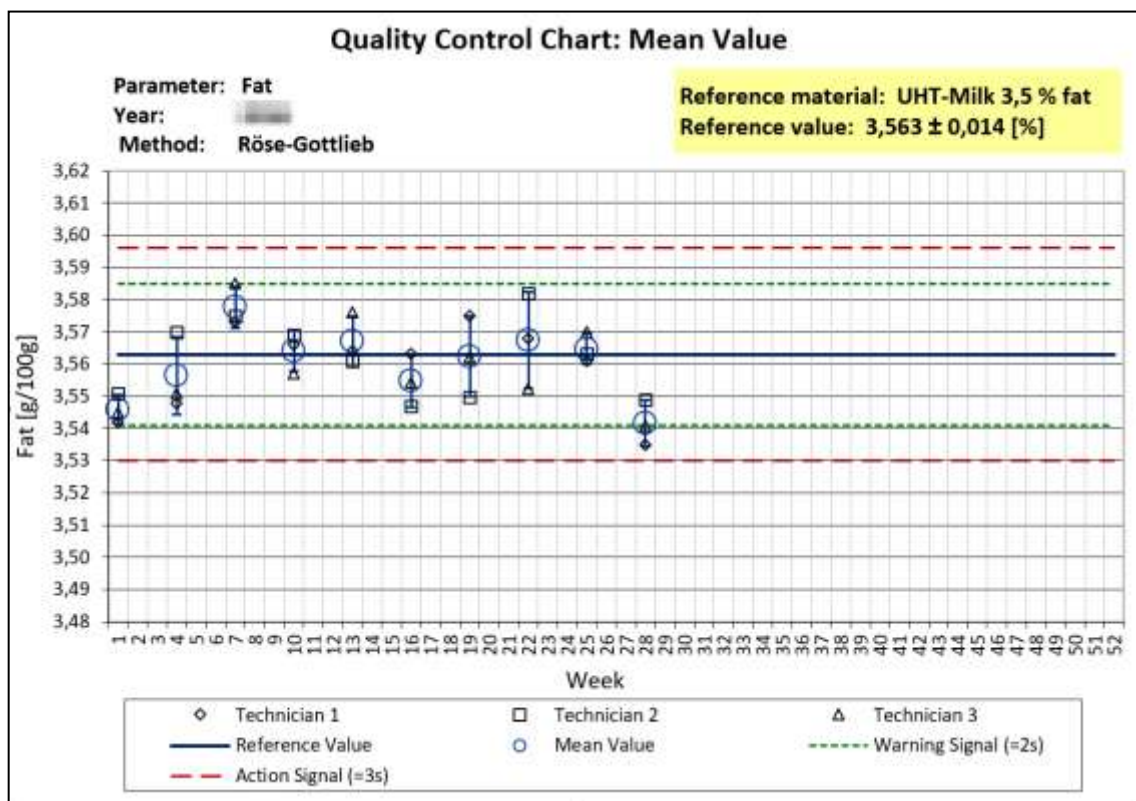
The reference materials from muva kempten GmbH are produced in accordance with the currently valid international guidelines (e.g. DIN EN ISO 17034) and stands out by their high quality.

- ▶ 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



News

New layout of our website

As you may have noticed, we have modernised our website. We invite you to explore it.



<https://www.muva.de/>

You can now easily find the proficiency tests and reference materials under "Food":

- ▶ Analytical quality assurance

<https://www.muva.de/analytische-qz>

All documents, such as the current catalogue or the order form for the reference materials are linked on the reference materials site.

Or simply have a look at our Info desk. There you will also find all documents under "R" like "reference materials".



You can also check if your data sheet is up-to-date in the Infothek under „[Referenzmaterial Version-Tabelle](#)“ at any time.



Reference material orders

This year, reference materials will only be sent out until 12 noon on 18.12.2023. After that, material shipping will be possible again from 08.01.2024.

Limited quantity labelling

By popular request, you can now see at a glance which reference materials are still in stock in limited quantities. So that you still have the possibility to order the suitable material. The materials are labelled with the following icon:



Our discount system

You will find our new scale of discounts on page 23:

From 8 units:	5 %
from 15 units:	10 %
from 35 units:	15 %

New contact partner

We are pleased to welcome a new member of staff to our department. Luana Scarvaglieri will be available to answer all your questions about our reference material.






Luana Scarvaglieri
Tel.: +49 (0) 831/5290-233
E-Mail: ring-ref@muva.de

Luana Scarvaglieri









Chemical-physical analyses

Code	Material*	Parameter	Unit	Reference value	Packaging unit
UHT MILK					
muva-M-0153	UHT Milk	Fat	g/100g	3,536	500 ml
	3,5 % Fat	Dry matter	g/100g	12,40	
	Best before: 03/2024	Protein	g/100g	3,352	
		Lactose (monohydrate)	g/100g	4,631	
		Freezing point	°C	-0,505	
		pH-value	/	6,60	
muva-M-0154	UHT Milk	Fat	g/100g	1,605	200 ml
	1,5 % Fat	Dry matter	g/100g	10,68	
	Best before: 08/2024	Protein	g/100g	3,430	
		Lactose (monohydrate)	g/100g	4,772	
		Freezing point	°C	-0,5198	
		pH-value	/	6,4	
muva-M-0155	UHT Milk	Fat	g/100g	3,486	200 ml
	3,5 % Fat	Dry matter	g/100g	12,33	
	Best before: 08/2024	Protein	g/100g	3,338	
		Lactose (monohydrate)	g/100g	4,688	
		Freezing point	°C	-0,5173	
		pH-value	/	6,64	
UHT MILK (LOW IN LACTOSE, LACTOSE FREE)					
muva-ML-2320	UHT Milk (lactose-reduced)	Lactose (monohydrate):			40 ml
		HPLC	g/100g	0,231	
	Best before: 06/2024	Enzym. (Gal.)	g/100g	0,335	
		Enzym. (Glc.)	g/100g	0,300	
		Galactose enzym.	g/100 g	2,21	
		Glucose enzym.	g/100 g	2,26	
muva-ML-	UHT Milk (free of lactose)	Lactose (monohydrate):			40 ml
		HPLC	g/100g		
	Best before:	Enzym. (Gal.)	g/100g		
		Enzym. (Glc.)	g/100g		
		Galactose enzym.	g/100 g		
		Glucose enzym.	g/100 g		
Available from 04/2024					

Available from
04/2024

Code	Material*	Parameter	Unit	Reference value	Packaging unit
RAW MILK					
muva-RO-0767	 Raw milk (shock frozen) Best before: 01/2025	Fat	g/100g	4,301	40ml
		Dry matter	g/100g	13,64	
		Protein	g/100g	3,888	
		Lactose monohydrate	g/100g	4,737	
		Freezing point	°C	-0,5247	
		pH-value	/	6,71	
		Casein	g/100g	3,072	
muva-RO-0768	 Raw milk (shock frozen) Best before: 01/2025	Fat	g/100g	4,301	40ml
		Dry matter	g/100g	13,64	
		Protein	g/100g	3,888	
		Lactose monohydrate	g/100g	4,737	
		Freezing point	°C	-0,5247	
		pH-value	/	6,71	
		Casein	g/100g	3,072	
muva-RO-0770	 Raw milk (shock frozen) Best before:	Fat	g/100g	4,301	40ml
		Dry matter	g/100g	13,64	
		Protein	g/100g	3,888	
		Lactose monohydrate	g/100g	4,737	
		Freezing point	°C	-0,5247	
		pH-value	/	6,71	
		Casein	g/100g	3,072	
muva-RO-0771	 Raw milk (shock frozen) Best before:	Fat	g/100g	3,619	40ml
		Dry matter	g/100g	13,02	
		Protein	g/100g	3,893	
		Lactose monohydrate	g/100g	4,832	
		Freezing point	°C	-0,5244	
		pH-value	/	6,72	
		Casein	g/100g	3,065	
FATTY ACID COMPOSITION IN RAW MILK					
muva-FM-2109 Available from 06/2024	 Fatty acid composition in raw milk (shock frozen) Best before:	Butyric acid (C4:0)	g/100 g		40 ml
		Caproic acid (C6:0)	g/100 g		
		Caprylic acid (C8:0)	g/100 g		
		Capric acid (C10:0)	g/100 g		
		Lauric acid (C12:0)	g/100 g		
		Myristic acid (C14:0)	g/100 g		
		Myristoleic acid (C14:1)	g/100 g		
		Palmitic acid (C16:0)	g/100 g		
		Palmetoleic acid (C16:1 cis)	g/100g		
		Stearic acid (C18:0)	g/100 g		
		Oleic acid (C18:1 cis-9)	g/100 g		
		Elaidic acid (C18:1 total trans)	g/100 g		
		Linoleic acid (C18:2 all-cis-9,12)	g/100 g		
		C18:2 total trans	g/100g		
		Linolenic acid (C18:3 all-cis-9,12,15)	g/100 g		
		Arachidic acid (C20:0)	g/100 g		

NEW








Code	Material*	Parameter	Unit	Reference value	Packaging unit
AFLATOXIN M1 IN RAW MILK					
muva- MA-2410	 Aflatoxin M1 in milk (shock frozen)	Aflatoxin M1	µg/kg	0,010	40 ml
Best before: 04/2024					
muva- MA-2411	 Aflatoxin M1 in Milk (shock frozen)	Aflatoxin M1	µg/kg	0,062	40 ml
Best before: 07/2025					
VETERINARY DRUGS					
muva- TAZ-2701	 Veterinary drugs in raw milk (shock frozen)	Ampicillin Cefalexin Cefoperazon Sulfadimidin Tetracyclin Enrofloxacin	µg/kg	4,10 101,12 44,82 110,72 110,46 100,66	40 ml
Best before: 02/2024					
muva- TAZ-2702	 Veterinary drugs in raw milk (shock frozen)	Ampicillin Cefalexin Cefoperazon Sulfadimidin Tetracyclin Enrofloxacin	µg/kg	/ / 7,84 20,98 21,28 22,61	40 ml
Best before: 02/2024					
muva- TAM-2804 (qualitative)	 Veterinary drugs in raw milk (shock frozen)	Cefalonium	Content ca. 10% above MRL		40 ml
Best before: 04/2024					
muva- TAM-2805 (qualitative)	 Veterinary drugs in raw milk (shock frozen)	Penicillin G	Content ca. 10% above MRL		40 ml
Best before: 04/2024					
muva- TAM-2806 (blind sample)	 Veterinary drugs in raw milk (shock frozen)	Antibiotics free	negative		40 ml
Best before: 07/2024					
MILK FOR POWDER PRODUCTION					
muva- PM-2901	 Base milk for powder production (shock frozen)	Fat Dry matter Protein Lactose monohydrate pH-value	g/100g g/100g g/100g g/100g /	3,508 13,00 3,341 5,361 6,68	40ml
Best before: 03/2024					

Code	Material*	Parameter	Unit	Reference value	Packaging unit
EVAPORATED MILK / COFFEE CREAM					
muva-KM-0517	Evaporated milk 8 % Fat	Fat	g/100g	8,12	170 g
		Dry matter	g/100g	25,88	
	Protein	g/100g	6,12		
	Best before: 05/2024	Ash	g/100g	1,30	
	Phosphorus	mg/kg	1644		
muva-KM-0518	Coffee cream 10 % Fat	Fat	g/100g	10,18	250 ml
		Dry matter	g/100g	18,36	
	Protein	g/100g	3,15		
	Best before: 05/2024	Ash	g/100g	0,66	
	Phosphorus	mg/kg	868		
muva-KM-0519	Evaporated milk 4 % Fat	Fat	g/100g	4,09	170 g
		Dry matter	g/100g	24,31	
	Protein	g/100g	7,09		
	Best before: 04/2025	Ash	g/100g	1,49	
	Phosphorus	mg/kg	2050		
muva-KM-0520	Evaporated milk 8 % Fat	Fat	g/100g	8,14	170 g
		Dry matter	g/100g	25,71	
	Protein	g/100g	6,16		
	Best before: 04/2025	Ash	g/100g	1,32	
	Phosphorus	mg/kg	1696		
YOGHURT					
muva-JO-1427	Yoghurt 1,8% Fat	Fat	g/100g	1,81	500 g
		Dry matter	g/100g	11,81	
	Protein	g/100g	4,72		
	Best before: 04/2023	Lactic acid	mg/100g	1130	
	pH-value	/	/		
muva-JO-1429	Yoghurt 1,8% Fat	Fat	g/100g	1,82	500 g
		Dry matter	g/100g	12,79	
	Protein	g/100g	4,7		
	Best before: 04/2023	Lactic acid	mg/100g	978	
	pH-value	/	/		
muva-JO-1431	Yoghurt 1,8% Fat	Fat	g/100g	1,79	500 g
		Dry matter	g/100g	12,00	
	Protein	g/100g	4,86		
	Best before: 05/2024	Lactic acid	mg/100g	964	
	pH-value	/	4,27		
muva-JO-1432	Yoghurt 3,8% Fat	Fat	g/100g	3,96	500 g
		Dry matter	g/100g	15,61	
	Protein	g/100g	4,52		
	Best before: 05/2024	Lactic acid	mg/100g	1147	
	pH-value	/	4,10		






NEW

NEW

Code		Material*	Parameter	Unit	Reference value	Packaging unit	
UHT CREAM							
muva-R-0444		UHT Cream	Fat	g/100g	14,95	ca. 100 ml	
		15 % Fat	Dry matter	g/100g	22,80		
		Best before: 03/2024	Protein	g/100g	3,03		
muva-R-0445		UHT Cream	Fat	g/100g	30,24	ca. 140 ml	
		30 % Fat	Dry matter	g/100g	36,54		
		Best before: 02/2025	Protein	g/100g	2,38		
muva-R-0446		UHT Cream	Fat	g/100g	35,26	ca. 140 ml	
		36 % Fat	Dry matter	g/100g	41,01		
		Best before: 02/2025	Protein	g/100g	2,23		
BUTTER							
muva-BU-1311		Mildly soured butter	Solids non-fat	g/100g	1,59	250 g	
			Water	g/100g	15,43		
			Best before: 06/2024	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	Solids non-fat	g/100g	2,73	250 g	
			Water	g/100g	16,25		
			pH-value	/	6,48		
			Best before: 06/2024	Cholesterol	mg/kg		2203
			Chloride	mg/100g	828		
			Sodium chloride (via Chloride)	g/100g	1,36		
			Butyric acid methyl ester	g/100g	3,83		
muva-BU-1315		Sweet cream butter	Solids non-fat	g/100g	1,55	250 g	
			Water	g/100g	15,63		
			Best before: 12/2024	pH-value	/		6,75
			Cholesterol	mg/kg	2267		
			Butyric acid methyl ester	g/100g	3,86		
muva-BU-1316		Sweet cream butter salted	Solids non-fat	g/100g	2,43	250 g	
			Water	g/100g	15,91		
			pH-value	/	6,52		
			Best before: 11/2025	Cholesterol	mg/kg		2299
			Sodium	mg/100g	463		
			Chloride	mg/100g	708		
			Sodium Chloride:	g/100g	1,17		
			- via chloride	g/100g	1,18		
			- via sodium	g/100g	1,18		
Butyric acid methyl ester	g/100g	3,69					
muva-BU-1317		Mild acid butter	Solids non-fat	g/100g	1,33	250 g	
			Water	g/100g	15,53		
			Best before: 12/2025	pH-value	/		6,21
			Cholesterol	mg/kg	2280		
			Butyric acid methyl ester	g/100g	3,78		

Code	Material*	Parameter	Unit	Reference value	Packaging unit
PROCESSED CHEESE					
muva-SK-0321	Processed cheese 40 % f.i.d.m. Best before: 4 weeks after shipment	Fat	g/100 g	13,21	250 g
		Dry matter	g/100 g	35,21	
		Protein N x 6,38	g/100 g	16,31	
		Lactose (monohydrate)	g/100 g	0,29	
		Ash	g/100g	3,91	
		pH-value	/	5,61	
		Citronic acid	mg/100g	71,4	
		Chloride	mg/100g	506	
		Sodium chloride via Chloride	g/100g	0,83	
		Sodium	mg/100g	904	
		Sodium chloride via Sodium	g/100g	2,30	
		Total phosphorus	g/100g	0,85	
muva-SK-0322	Processed cheese 45 % f.i.d.m. Best before: 4 weeks after shipment	Fat	g/100 g	19,12	250 g
		Dry matter	g/100 g	41,87	
		Protein N x 6,38	g/100 g	16,69	
		Lactose (monohydrate)	g/100 g	0,78	
		Ash	g/100g	3,98	
		pH-value	/	5,68	
		Citronic acid	mg/100g	120,5	
		Chloride	mg/100g	477	
		Sodium chloride via Chloride	g/100g	0,79	
		Sodium	mg/100g	900	
		Sodium chloride (via Sodium)	g/100g	2,29	
		Total phosphorus	g/100g	0,86	
muva-SK-0324	Processed cheese 50 % f.i.d.m. Best before: 4 weeks after shipment	Fat	g/100 g	26,01	250 g
		Dry matter	g/100 g	45,86	
		Protein N x 6,38	g/100 g	8,31	
		Lactose (monohydrate)	g/100 g	7,53	
		Ash	g/100g	3,07	
		pH-value	/	5,74	
		Citronic acid	mg/100g	247,3	
		Chloride	mg/100g	337	

Code	Material*	Parameter	Unit	Reference value	Packaging unit
CREAM CHEESE					
muva-FK-1234	Cream cheese 30 % f.i.d.m.	Fat	g/100g	4,02	300 g
		Dry matter	g/100g	19,94	
	Best before: 02/2025	Protein	g/100g	10,29	
		Lactose	g/100g	2,86	
		Lactic acid	mg/100g	579,4	
		pH-Wert	/	4,57	
		Sodium	mg/100g	205	
		Chloride	mg/100g	345	
muva-FK-123 Available from 06/2024	Cream cheese 47 % f.i.d.m.	Fat	g/100g	300 g	
		Dry matter	g/100g		
	Best before:	Protein	g/100g		
		Lactose	g/100g		
		Lactic acid	mg/100g		
		pH-Wert	/		
		Chloride	mg/100g		
		Sodium	mg/100g		
muva-FK-123 Available from 06/2024	Cream cheese 11 % f.i.d.m.	Fat	g/100g	300 g	
		Dry matter	g/100g		
	Best before:	Protein	g/100g		
		Lactose	g/100g		
		Lactic acid	mg/100g		
		pH-Wert	/		
		Chloride	mg/100g		
		Sodium	mg/100g		
HARD CHEESE					
muva-HA-1515	 Hard cheese Type Emmentaler	Fat	g/100g	28,35	100 g
		Dry matter	g/100g	63,68	
	Best before: 4 weeks after shipment	Protein	g/100g	28,93	
		pH-value	/	5,51	
		Chloride	mg/100g	383	
		Sodium chloride (via Chloride)	g/100g	0,63	
		Sodium	mg/100g	230	
		Sodium chloride (via Sodium)	g/100g	0,59	
SEMI HARD CHEESE					
muva-K-1803	 Semi hard cheese Type Gouda	Fat	g/100g	26,73	100 g
		Dry matter	g/100g	58,10	
	Best before: 4 weeks after shipment	Protein	g/100g	23,04	
		pH-value	/	5,21	
		Chloride	mg/100g	1364	
		Sodium chloride (via Chloride)	g/100g	2,25	

Code	Material*	Parameter	Unit	Reference value	Packaging unit
muva-K-1804	 Semi hard cheese Type Gouda Best before: 4 weeks after shipment	Fat	g/100g	27,58	100 g
		Dry matter	g/100g	58,35	
		Protein	g/100g	23,50	
		pH-value	/	5,30	
		Sodium	mg/100g	683	
		Sodium chloride (via Chloride)	g/100g	1,71	
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
MILK POWDER					
muva-MP-0219	Skimmed milk powder spray dried Best before 12/2025	Fat	g/100g	0,74	80 g
		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	1,29	80 g
		Dry matter	g/100g	96,61	
		Free Fat	g/100g	0,51	
		Protein	g/100g	35,79	
		Lactose (monohydrate)	g/100g	0,050	
		Ash	g/100g	7,63	
		pH-value	/	6,57	
		Nitrate	mg/kg	6,40	
muva-MP-0221	Whole milk powder roller dried Best before: 10/2027	Fat	g/100g	25,75	80 g
		Free 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	
muva-MP-0222	Fat reduced milk powder spray dried Best before: 10/2027	Fat	g/100g	13,36	80 g
		Free 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	

Code	Material*	Parameter	Unit	Reference value	Packaging unit
muva- MP-0223	Whole milk powder	Fat	g/100g	26,37	80 g
		Free Fat	g/100g	7,45	
	spray dried	Dry matter	g/100g	96,63	
		Protein	g/100g	27,09	
	Best before 10/2027	Lactose (monohydrate)	g/100g	37,62	
		Ash	g/100g	5,66	
		pH-value	/	6,66	
		Nitrate	mg/kg	3,65	
muva- MP-0224	Cream powder	Fat	g/100g	42,25	80 g
		Dry matter	g/100g	98,10	
	roller dried	Protein	g/100g	19,26	
		Lactose (monohydrate)	g/100g	30,92	
	Best before 10/2027	Ash	g/100g	4,43	
		pH-value	/	6,69	
FATTY ACID COMPOSITION IN MILK POWDER					
muva- FM-2107	Fatty acid composition	Butyric acid (C4:0)	g/100 g	3,66	80 g
		In milk powder	Caproic acid (C6:0)	g/100 g	
	Best before: 10/2027	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	
WHEY POWDER					
muva- MO-0616	Whey powder	Fat	g/100g	2,58	80 g
		Dry matter (87 °C)	g/100g	96,01	
	Best before: 05/2024	Dry matter (102 °C)	g/100g	95,75	
		Protein	g/100g	35,56	
		Lactose (monohydrate)	g/100g	49,44	
		Ash	g/100g	6,34	
		Calcium	mg/kg	4996	
		Magnesium	mg/kg	966	
		Nitrate	mg/kg	19,8	
		NPN	g/100g	3,04	
		Total lactic acid	mg/100g	317,1	

Code	Material*	Parameter	Unit	Reference value	Packaging unit
muva-MO-0617	Whey powder Best before: 02/2027	Fat	g/100g	0,78	80 g
		Dry matter (87 °C)	g/100g	98,55	
		Dry matter (102 °C)	g/100g	98,23	
		Protein	g/100g	12,67	
		Lactose (monohydrate)	g/100g	72,45	
		Ash	g/100g	7,64	
		Calcium	mg/kg	5122	
		Magnesium	mg/kg	1176	
		Nitrate	mg/kg	35,5	
		NPN	g/100g	2,97	
		Total lactic acid	mg/100g	392,5	
WHEY PROTEIN CONCENTRATE					
muva-MPK-0905	Whey protein concentrate Best before: 10/2025	Fat	g/100g	4,87	80 g
		Water	g/100g	3,56	
		Protein	g/100g	65,74	
		Lactose (monohydrate)	g/100g	18,95	
		Ash	g/100g	4,07	
muva-MPK-0907	Whey protein concentrate Best before: 05/2026	Fat	g/100g	5,92	80 g
		Water	g/100g	4,42	
		Protein	g/100g	77,53	
		Lactose (monohydrate)	g/100g	6,4	
		Ash	g/100g	3,19	
muva-MPK-0909	Whey protein concentrate Best before: 05/2030	Fat	g/100g	5,35	80 g
		Water	g/100g	5,06	
		Protein	g/100g	77,51	
		Lactose (monohydrate)	g/100g	6,31	
		Ash	g/100g	3,28	
SODIUM-CASEINATE					
muva-CA-0908	Sodium-caseinate Best before: 01/2028	Fat	g/100g	0,77	60 g
		Water	g/100g	5,46	
		Protein	g/100g	91,11	
		Lactose (monohydrate)	g/100g	0,06	
		Ash	g/100g	3,48	
CARBOHYDRATES / VITAMINS					
muva-KI-1108	Carbohydrates / vitamins Infant food (powder) Best before: 04/2025	Glucose	g/100g	1,17	80 g
		Fructose	g/100g	2,02	
		Lactose (monohydrate)	g/100g	22,75	
		Saccharose	g/100g	0,65	
		Vitamin A	µg/100g	540	
		Vitamin C	mg/100g	40,4	
		Vitamin E	mq/100g	5,42	

Code	Material*	Parameter	Unit	Reference value	Packaging unit
muva-KI-1109	Carbohydrates / vitamins Infant food (powder) Best before: 04/2025	Glucose	g/100g	1,24	80 g
		Fructose	g/100g	1,52	
		Lactose (monohydrate)	g/100g	23,46	
		Saccharose	g/100g	0,99	
		Vitamin A	µg/100g	568	
		Vitamin C	mg/100g	42,1	
		Vitamin E	mg/100g	5,56	
MINERALS / TRACE ELEMENTS					
muva-NEM-1608	Minerals / trace elements Infant food (powder) Best before: 04/2025	Sodium	mg/kg	1439	80 g
		Kalium	mg/kg	6891	
		Calcium	mg/kg	5123	
		Magnesium	mg/kg	908,4	
		Iron	mg/kg	28,2	
		Zinc	mg/kg	21,2	
		Phosphorus	mg/kg	4434	
		Copper	mg/kg	2,49	
		Manganese	mg/kg	11,99	
		Chloride	mg/kg	2797	
muva-NEM-1609	Minerals / trace elements Infant food (powder) Best before: 04/2025	Sodium	mg/kg	1441	80 g
		Kalium	mg/kg	6214	
		Calcium	mg/kg	4993	
		Magnesium	mg/kg	545,1	
		Iron	mg/kg	18,5	
		Zinc	mg/kg	12,4	
		Phosphorus	mg/kg	3198	
		Copper	mg/kg	1,37	
		Manganese	mg/kg	2,40	
		Chloride	mg/kg	2892	
MILK POWDER WITH DEFINED CONTENT OF RENNET WHEY POWDER					
muva-GMP-2601	Milk powder with defined content of rennet whey powder Best before: 04/2024	Content of rennet whey powder	g/100g	5,63	ca. 25 g
muva-GMP-2602	Milk powder with defined content of rennet whey powder Best before: 04/2024	Content of rennet whey powder	g/100g	1,07	ca. 25 g

Code	Material*	Parameter	Unit	Reference value	Packaging unit
PLANT DRINK (Oats/Soja)					
muva- VM-3101	Plant drink (Oats) Best before: 07/2025	Fat		0,98	40 ml
		Dry matter (102 °C)		10,83	
		Protein		1,29	
muva- VM-3102	Plant drink (Soja) Best before: 07/2025	Fat		3,39	40 ml
		Dry matter (102 °C)		2,05	
		Protein		7,54	
VEGAN SPREAD CREAM					
muva- VS-3001	Chickpea base Best before: 06/2024	Fat	g/l	18,82	100 g
		Dry matter (102 °C)	g/l	30,60	
		Protein	g/l	1,35	
		Ash	g/l	0,81	
muva- VS-3001	Chickpea base Best before: 04/2024	Fat	g/l	22,60	100 g
		Dry matter (102 °C)	g/l	34,87	
		Protein	g/l	4,30	
		Ash	g/l	1,17	
FRUIT JUICE					
muva- FS-1918	Grape juice Best before: 03/2024	Glucose	g/l	77,56	200 ml
		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: 03/2024	Glucose	g/l	22,11	150 ml
		Fructose	g/l	64,23	
		Titratable acid	mmol H ⁺ /l	70,20	
		pH-value	/	3,66	
		Ethanol	mg/l	431,1	
		Soluble solids	°Brix	12,20	

NEW

Code	Material*	Parameter	Unit	Reference value	Packaging unit
CHOCOLATE					
muva-S-0819	Nougat Best before: 03/2024	Fat	g/100g	35,26	100 g
		Dry matter	g/100g	99,71	
		Protein	g/100g	7,64	
		Lactose (monohydrate)	g/100g	0,208	
		Saccharose	g/100g	49,57	
		Theobromine	mg/kg	778	
muva-S-0820	Whole milk chocolate Best before: 11/2025	Fat	g/100g	40,53	100 g
		Dry matter	g/100g	99,18	
		Protein	g/100g	7,72	
		Lactose (monohydrate)	g/100g	8,24	
		Saccharose	g/100g	35,11	
		Theobromine	mg/kg	1926	
muva-S-0821	Nougat Best before: 02/2027	Fat	g/100g	30,35	100 g
		Dry matter	g/100g	99,38	
		Protein	g/100g	7,19	
		Lactose (monohydrate)	g/100g	4,76	
		Saccharose	g/100g	164	
		Theobromine	mg/kg	1640	
CANNED SAUSAGE					
muva-BR-1007	Canned sausage (calf liver sausage) Best before: 04/2025	Fat	g/100 g	35,12	125 g
		Water	g/100 g	46,97	
		Protein (N x 6,25)	g/100 g	13,98	
		Chloride	mg/100 g	1093	
		Sodium chloride (via Chloride)	g/100 g	1,80	
		Ash	g/100 g	2,30	
		Hydroxyproline	g/100 g	0,24	
muva-BR-1008	Canned sausage (Lyoner) Best before: 04/2025	Fat	g/100 g	23,82	125 g
		Water	g/100 g	60,79	
		Protein (N x 6,25)	g/100 g	12,78	
		Chloride	mg/100 g	1119	
		Sodium chloride (via Chloride)	g/100 g	1,84	
		Ash	g/100 g	2,59	
		Hydroxyproline	g/100 g	0,22	

* None of the reference materials are suitable for consumption!

** Prices do not include VAT

Microbiological analysis

All microorganisms belong to risk group S1

NEW

NEW

NEW

NEW

NEW

NEW

NEW

NEW

Code	Material*	Parameter	Unit	Reference value	Packaging unit
BACTERIAL COUNT					
muva-MBK-1721	Hard Cheese (freeze-dried) Best before: 06/2024	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/g	5,97	40 g
muva-MBK-1722	Curd powder Best before: 05/2025	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/g	2,71	40 g
muva-GKZ-1723	Milk available from 01/2024	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/ml		30 ml
muva-GKZ-1724	Milk available from 01/2024	Mesophilic, aerobic Bacterial Count	log ₁₀ cfu/ml		30 ml
E. COLI / ENTEROBACTERIACEAE / COLIFORME					
muva-ECE-1723	Milk available from 01/2024	E. Coli Enterobacteriaceae Coliforms	log ₁₀ cfu/ml		30 ml
muva-ECE-1724	Milk available from 01/2024	E. Coli Enterobacteriaceae Coliforms	log ₁₀ cfu/ml		30 ml
YEAST / GEOTRICHUM					
muva-HS-1727	Milk	Yeasts Geotrichum	log ₁₀ cfu/ml		30 ml
muva-HS-1728	Milk	Yeasts Geotrichum	log ₁₀ cfu/ml		30 ml
STAPHYLOCOCCUS					
muva-ST-1715	Milk Best before: 02/2024	Staphylococcus	log ₁₀ cfu/ml	5,11	30 ml
muva-ST-1717	Milk Best before: 07/2024	Staphylococcus	log ₁₀ cfu/ml	4,60	30 ml
muva-ST-1718	Milk Best before: 07/2024	Staphylococcus	log ₁₀ cfu/ml	5,48	30 ml

* None of the reference materials are suitable for consumption!

** Prices do not include VAT.

Sensory Analyses

Code	Material*	Parameter	Number of Packs	Packungseinheit
SENSORY RANK ORDER				
muva-SeRF-24	Canned sausage Lyoner Best before: 12/2024	sweet	4 samples	4 x 200 g
muva-SeRF-44	Canned sausage Lyoner Best before: 12/2024	salty	4 samples	4 x 100 g
SENSORY TRIANGLE TEST				
muva-SeD-12	Canned sausage Lyoner Best before: 12/2024	garlic	3 samples	3x 200 g
muva-SeD-18	Canned sausage Lyoner Best before: 12/2024	pepper	3 samples	3x 100 g
SENSORY FATS & OILS				
muva-SeO-17	Rapeseed oil MHD 12/2024	deficient	1 sample	30 ml
muva-SeO-18	Rapeseed oil MHD 12/2024	neutral	1 sample	30 ml
SENSORY ISO 22935				
muva-SeDLG-55	UHT milk 3,5 % MHD 06/2024	neutral	1 sample	200 ml
muva-SeDLG-56	UHT milk 3,5 % MHD 06/2024	deficient	1 sample	200 ml

* 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 visuals.

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 all the training materials and the price details at www.muva.de or in our info desk.

If you have any questions, we will be pleased to advise you!

Your contact person

Rebekka Wucher

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

E-Mail: [rebekka.wucher\(at\)muva.de](mailto:rebekka.wucher(at)muva.de)

Material	Parameter	Samples
Sniffing Sticks ¹⁾	Within the aroma-sets you can choose ten different flavours freely.	10 sticks incl. storage case or as refill-set
Basic tastes	sweet, sour, bitter, salty und umami	For the training of 5-10 persons
Threshold test	basic taste of your choice	For the training of 10-20 persons
Colour sequences ¹⁾	wet medium: red, yellow, green colour gradient: red - violet - blue, yellow - green - blue dry medium: graphite	10 th ranking
haptic test ¹⁾	haptic test (10 th ranking) based on silicone with different levels of firmness Long lasting durability!	10 th ranking
Large training case	Contains: basic tastes, threshold test, triangular odour / taste test, taste ranking, further taste exercises, colour ranking, haptic test and sniffing sticks.	Complete set

¹⁾ Material not suitable for human consumption.

Sensory Test Kit “Drinking Water”

For drinking water sampling according 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 sticks 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
Test kit drinking water case	5 different odours 5 different visual attributes	10 Test samples
Refill package sniffing sticks	5 different odours	5 Test samples
Refill package visual test	5 different visual attributes	5 Test samples
Single stick / Single test tube	1 odour or 1 visual attribute each	1 Test samples

* None of the reference materials are suitable for consumption!

More information about all the training materials and the price details at www.muva.de or in our info desk.

Your contact person

Rebekka Wucher

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

E-Mail: [rebekka.wucher\(at\)muva.de](mailto: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 8 units:	5 %
from 15 units:	10 %
from 35 units:	15 %

❄ 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	Styrofoambox + 7 TP ¹⁾	20,00 €	20,00 €
VP2	Up to 30 bottles	Styrofoambox + 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).

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:		
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 kempten GmbH apply at all times (www.muva.de)

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

Date

muva kempten GmbH
Registered Office: Kempten / Local Court Kempten: HRB 13347
Managing Director: Dr. Monika Knödseder
Ignaz-Kiechle-Straße 20-22 ·
D-87437 Kempten (Allgäu) / Postfach 3254

Signature

Your contact person:
Luana Scarvaglieri
E-Mail: [ringref\(at\)muva.de](mailto:ringref(at)muva.de)
Web: www.muva.de
Phone: +49 (0) 831/5290-233

Order Form for drinking Water Test kit

Order-No.:

Customer-No.:

Please send me the following materials in the following quantities:

Desired quantity	Material	Set	Remarks
	Test kit drinking water case	5 different odours 5 different visual attributes	
	Refill package sniffing sticks	5 different odours	
	Refill package visual Test	5 different visual attributes	
	Single stick / Single test tube	1 odour or 1 visual attribute each	

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 kempten GmbH apply at all times (www.muva.de)

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

Date

Signature

muva kempten GmbH
Registered Office: Kempten / Local Court Kempten: HRB 13347
Managing Director: Dr. Monika Knödseder
Ignaz-Kiechle-Straße 20-22 ·
D-87437 Kempten (Allgäu) / Postfach 3254

Your contact person:
Rebekka Wucher
E-Mail: [rebekka.wucher\(at\)muva.de](mailto:rebekka.wucher(at)muva.de)
Web: www.muva.de
Phone: +49 (0) 831/5290-236