



Program Reference Materials

Version 04/2019
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...quality assured

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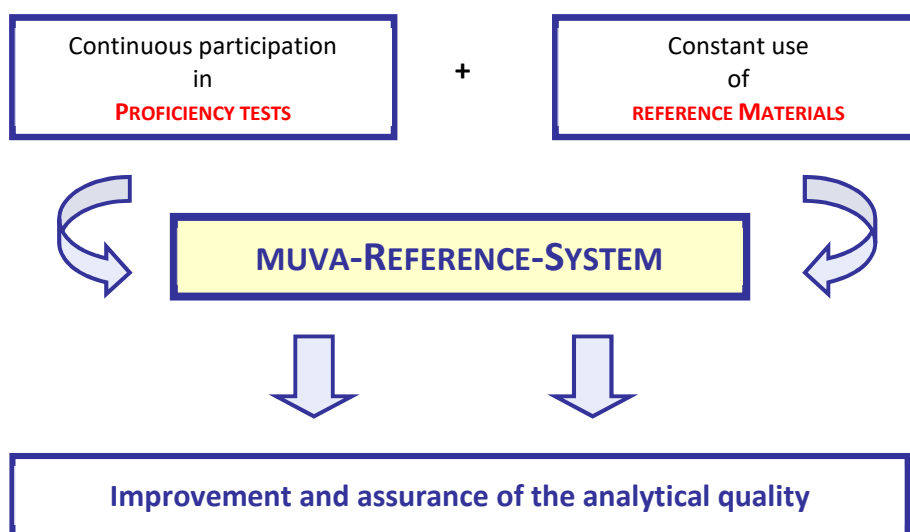
TRUST IS GOOD – CONTROL IS BETTER!

Within quality assurance in food analysis the question comes up, to what extent the result of your analysis is close to the true value. Today it is essential to clarify this question, because the consequences of inexact results can be annoying and cost-intensive.

Besides the participation in proficiency testing studies the use of reference materials is also a suitable tool to proof the optimum quality of the whole panel and the panellists.

Reference materials can be used for quality control charts as well as for the training of the technicians.

GUARANTEED ACCURATE RESULTS BY THE HELP OF REFERENCE SYSTEM OF MUVA KEMPTEN GMBH



The **REFERENCE SYSTEM** of MUVA KEMPTEN GMBH is based on two essential modules in analytical quality assurance. Besides the participation in **PROFICIENCY TESTING** schemes of MUVA KEMPTEN GMBH, **REFERENCE MATERIALS** contribute substantially to the internal and external quality assurance.

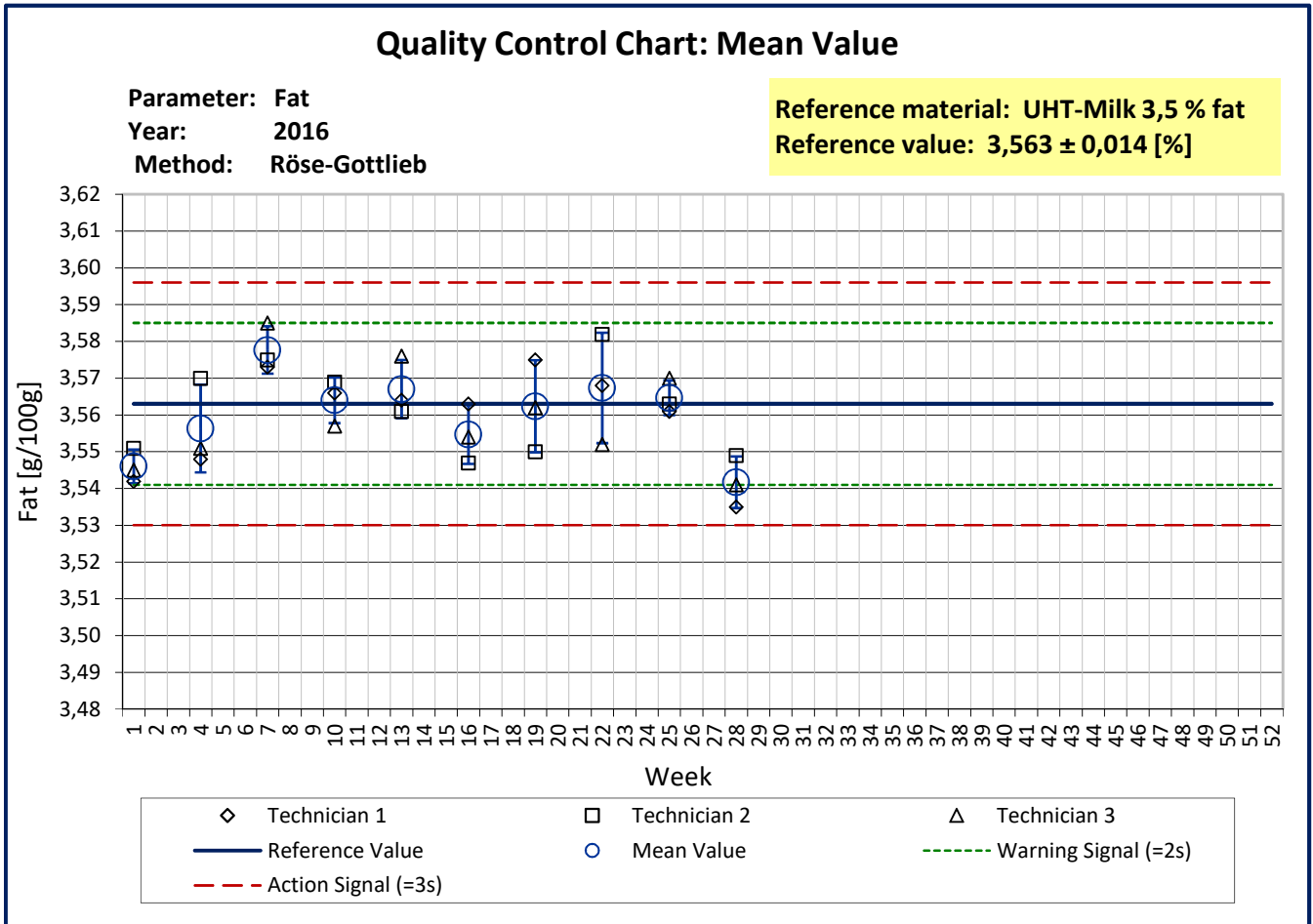
The use of these suitable instruments ensures the accuracy and reliability of all results with high probability. Therefore it assures maximal certainty and in addition it allows a clearly documentation and demonstration to third parties:

REFERENCE MATERIALS OF MUVA KEMPTEN GMBH

The **REFERENCE MATERIALS** of MUVA KEMPTEN GMBH are produced according to the international accepted standards and are characterized by high quality.

- The reference values for all parameters are based on a high number of datasets, which are mainly obtained by several laboratory comparisons. This ensures the high reliability of the reference values.
- The homogeneity of the material is tested by the laboratory of MUVA KEMPTEN GMBH for all relevant parameters. The results are indicated in the data sheets.
- The **REFERENCE MATERIALS** have been predominantly produced for long-term use. During storage, materials are regularly checked for their stability by the laboratory of MUVA KEMPTEN GMBH.
- A clear and significant data sheet is attached to each reference material.

- Continuous monitoring of the chemical, physical and microbiological analysis by use of control charts. In addition to the monitoring of the analytical reproducibility, failures, bias and trends in analyses can be detected at a glance and consequently they can be rapid and effectively corrected.
- Improvement of the analytical process
Cause studies after detection of failures in analysis, training of the personal etc.
- Estimation of the measurement uncertainty
- Determination of the analytical performance (z-score, z'-score etc.)
- Calibration of analytical devices



MUVA KEMPTEN GMBH possesses long experience in practice with reference materials. Additionally it is an international provider in proficiency testing that has been accredited on the sectors of physical, physical-chemical, chemical, sensory and microbiological analysis of food stuffs.

Of course, we are happy to advice you and we are pleased to submit you an offer.

With exception of sensory materials for sensory tasting, all reference materials are unfit for human and animal consumption.

POWDER

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
MILK POWDER						
muva- MP-0211	Cream powder, roller dried Best before: 10/2022	Fat Free Fat Dry matter Protein Lactose (monohydrate) Ash	g/100g g/100g g/100g g/100g g/100g g/100g	42,16 39,53 99,04 21,47 28,15 4,65	80 g	31,50 €
muva- MP-0214	Milk powder, spray dried, fat reduced Best before: 01/2024	Fat Dry matter Protein Lactose (monohydrate) Ash Nitrate	g/100g g/100g g/100g g/100g g/100g mg/kg	13,88 97,16 32,94 43,53 6,82 6,0	80 g	31,50 €
muva- MP-0215	Whole milk powder, roller dried Best before: 01/2024	Fat Dry matter Protein Lactose (monohydrate) Ash Nitrate	g/100g g/100g g/100g g/100g g/100g mg/kg	26,79 97,75 24,87 40,27 5,54 2,5	80 g	31,50 €
muva- MP-0218	Whole milk powder, spray dried Best before: 10/2024	Fat Dry matter Protein Lactose (monohydrate) Ash	g/100g g/100g g/100g g/100g g/100g	26,86 96,64 26,77 37,28 5,60	80 g	31,50 €
muva- MP-0219	Skimmed milk powder, spray dried Best before: 12/2025	Fat Dry matter Protein Lactose (monohydrate) Ash	g/100g g/100g g/100g g/100g g/100g	0,73 96,45 35,12 52,42 7,86	80 g	31,50 €
MILK POWDER WITH DEFINED CONTENT OF RENNET WHEY POWDER						
muva- GMP- 2601	Milk Powder with defined content of Rennet Whey Powder Best before: 04/2023	Content of Rennet Whey Powder	g/100g	5,63	ca. 25 g	40,00 €
muva- GMP- 2602	Milk Powder with defined content of Rennet Whey Powder Best before: 04/2023	Content of Rennet Whey Powder	g/100g	1,07	ca. 25 g	40,00 €

POWDER

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
MINERALS / TRACE ELEMENTS						
muva-NEM-1605	Minerals / Trace Elements (Infant Food) Best before: 03/2020	Sodium Potassium Calcium Magnesium Iron Zinc Phosphorus Copper Manganese Chloride	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	1120 5979 4596 825,2 26,5 31,6 4143 2,60 14,4 2890	50 g	41,00 €
muva-NEM-1606	Minerals / Trace Elements (Infant Food) Best before: 04/2021	Sodium Potassium Calcium Magnesium Iron Zinc Phosphorus Copper Manganese Chloride	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	1366 5955 4315 529,4 19,0 25,2 3220 1,56 2,39 2649	50 g	41,00 €
muva-NEM-1607	Minerals / Trace Elements (Infant Food) Best before: 04/2021	Sodium Potassium Calcium Magnesium Iron Zinc Phosphorus Copper Manganese Chloride	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	1381 6895 4670 926,0 29,2 33,0 4483 2,38 13,89 2596	50 g	41,00 €
CARBOHYDRATES / VITAMINS						
muva-KI-1105	Carbohydrates / Vitamins (Infant Food) Best before: 03/2020	Glucose Fructose Lactose (Monohydrate) Saccharose Starch Vitamin A Vitamin C Vitamin E	g/100 g g/100 g g/100 g g/100 g g/100 g µg/100 g mg/100 g mg/100 g	1,06 1,75 24,27 1,15 34,20 466,9 41,9 5,3	50 g	33,00 €
muva-KI-1106	Carbohydrates / Vitamins (Infant Food) Best before: 04/2021	Glucose Fructose Lactose (Monohydrate) Saccharose Vitamin A Vitamin C Vitamin E	g/100 g g/100 g g/100 g g/ 100 g µg/100g mg/100 g mg/100 g	1,15 5,57 22,10 1,15 476,1 45,6 5,7	50 g	33,00 €
muva-KI-1107	Carbohydrates / Vitamins (Infant Food) Best before: 04/2021	Glucose Fructose Lactose (Monohydrate) Saccharose Vitamin A Vitamin C Vitamin E	g/100 g g/100 g g/100 g g/ 100 g µg/100g mg/100 g mg/100 g	1,20 2,11 22,67 0,72 489,5 47,7 5,5	50 g	33,00 €

POWDER

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
SODIUM CASEINATE						
muva-CA-0904	Sodium Caseinate Best before: 02/2023	Fat	g/100g	0,58	80 g	30,00 €
		Water	g/100g	5,62		
		Protein	g/100g	91,08		
		Lactose (monohydrate)	g/100g	0,023		
		Ash	g/100g	3,60		
muva-CA-0906	Sodium Caseinate Best before: 10/2025	Fat	g/100g	0,82	80 g	30,00 €
		Water	g/100g	5,79		
		Protein	g/100g	90,97		
		Lactose (monohydrate)	g/100g	0,044		
		Ash	g/100g	3,65		
WHEY PROTEIN CONCENTRATE						
muva-MPK-0905	Sodium Caseinate Best before: 10/2025	Fat	g/100g	4,90	80 g	30,00 €
		Water	g/100g	3,66		
		Protein	g/100g	65,76		
		Lactose (monohydrate)	g/100g	19,07		
		Ash	g/100g	4,05		
FATTY ACID COMPOSITION IN SPRAY DRIED WHOLE MILK POWDER						
Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
muva-FM-2105	Fatty acid composition (in spray dried whole milk powder) Best before: 05/2025	Butyric acid (C4:0)	g/100 g	3,53	at least 40 ml	55,00 €
		Caproic acid (C6:0)	g/100 g	2,26		
		Caprylic acid(C8:0)	g/100 g	1,33		
		Capric acid (C10:0)	g/100 g	3,04		
		Lauric acid(C12:0)	g/100 g	3,52		
		Myristic acid (C14:0)	g/100 g	11,52		
		Myristoleic acid(C14:1)	g/100 g	1,01		
		Palmetic acid (C16)	g/100 g	29,60		
		Palmitoleic acid (C16:1 cis)	g/100 g	1,50		
		Stearic acid(C18:0)	g/100 g	9,64		
		Oleic acid (C18:1 cis-9)	g/100 g	19,36		
		Elaidic acid (C18:1 total trans)	g/100 g	2,55		
		Linoleic acid (C18:2 all-cis-9,12)	g/100 g	1,59		
		C18:2 total trans	g/100 g	0,84		
		Linolenic acid (C18:3 all-cis-9,12,15)	g/100 g	0,68		
Arachidic acid (C20:0)	g/100 g	0,14				

MILK

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
UHT MILK						
muva-M-0142	UHT skimmed milk (sterilized) Best before: 01/2020	Fat Dry matter Protein Lactose (monohydrate) Freezing point pH value Calcium	g/100g g/100g g/100g g/100g °C / mg/kg	0,073 9,26 3,519 4,829 -0,5210 6,58 1200	250 ml	27,50 €
NEW muva-M-0144	UHT milk 1,5 % Fat (sterilized) Best before: 05/2020	Fat Dry matter Protein Lactose (monohydrate) Freezing point Calcium	g/100g g/100g g/100g g/100g °C mg/kg	1,578 10,68 3,497 4,755 -0,5184 1224	250 ml	27,50 €
UHT MILK (LOW IN LACTOSE, LACTOSE FREE)						
NEW muva-ML-2312	UHT-Milk (low in lactose) Best before: 07/2020	Lactose (monohydrate): ♦ via HPLC ♦ via enzym. (Gal.) ♦ via enzym. (Glc.) Galactose enzym. Glucose enzym.	g/100g g/100g g/100g g/100g g/100g	0,217 0,402 0,312 2,17 2,29	100 ml	25,00 €
NEW muva-ML-2313	UHT-Milk (lactose-free, frozen) Best before: 07/2020	Lactose (monohydrate): ♦ via HPLC ♦ via enzym. (Gal.) ♦ via enzym. (Glc.) Galactose enzym. Glucose enzym.	g/100g g/100g g/100g g/100g g/100g	0,007 0,033 0,025 2,38 2,41	at least 40 ml	25,00 €
AFLATOXIN M1 AND QAC IN UHT-MILK						
muva-MA-2405	UHT-Milk (frozen) Best before: 02/2020	Aflatoxin M1 BAC-C12 BAC-C14	µg/kg mg/kg mg/kg	0,025 0,106 0,046	40 ml	27,00 €
muva-MA-2406	UHT-Milk (frozen) Best before: 02/2020	Aflatoxin M1 BAC-C12 BAC-C14	µg/kg mg/kg mg/kg	0,010 0,033 0,015	40 ml	27,00 €

MILK

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
RAW MILK (SHOCK FROZEN)						
muva-RO-0749	Raw milk (shock frozen) Best before: 06/2020	Fat Dry matter Protein Lactose (monohydrate) Freezing point pH Value Casein	g/100g g/100g g/100g g/100g °C / g/100g	2,986 12,27 3,694 4,854 -0,5195 6,69 2,934	at least 40 ml	24,75 €
muva-RO-0751	Raw milk (shock frozen) Best before: 07/2021	Fat Dry matter Protein Freezing point pH Value Urea	g/100g g/100g g/100g °C / mg/l	2,878 11,97 3,489 -0,5215 6,69 299,1	at least 40 ml	24,75 €
muva-RO-0752	Raw milk (shock frozen) Best before: 11/2021	Fat Dry matter Protein Lactose (monohydrate) Freezing point pH Value Casein	g/100g g/100g g/100g g/100g °C / mg/l	4,608 13,69 3,625 4,741 -0,5217 6,71 2,873	at least 40 ml	24,75 €
muva-RO-0753	Raw milk (shock frozen) Best before: 11/2021	Fat Dry matter Protein Lactose (monohydrate) Freezing point pH Value Casein	g/100g g/100g g/100g g/100g °C / mg/l	1,905 11,36 3,927 4,811 -0,5213 6,72 3,108	at least 40 ml	24,75 €
FATTY ACID COMPOSITION IN RAW MILK (SHOCK FROZEN)						
Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
muva-FM-2104	Fatty acid composition (in raw milk, shock frozen) Best before: 06/2020	Butyric acid (C4:0) Caproic acid (C6:0) Caprylic acid(C8:0) Capric acid (C10:0) Lauric acid(C12:0) Myristic acid (C14:0) Myristoleic acid(C14:1) Palmetic acid (C16) Palmitoleic acid (C16:1 cis) Stearic acid(C18:0) Oleic acid (C18:1 cis-9) Elaidic acid (C18:1 total trans) Linoleic acid (C18:2 all-cis-9,12) C18:2 total trans Linolenic acid (C18:3 all-cis-9,12,15) Arachidic acid (C20:0)	g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g g/100 g	3,47 2,20 1,37 3,05 3,63 12,17 1,14 30,74 1,59 9,08 18,89 2,73 1,23 1,02 0,43 0,14	at least 40 ml	55,00 €

DAIRY PRODUCTS

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
EVAPORATED MILK						
muva-KM-0513	Evaporated Milk 8 % fat Best before: 02/2020	Fat Dry matter Protein Ash Phosphorus	g/100g g/100g g/100g g/100g mg/kg	8,12 26,04 6,22 1,33 1764	170 g	27,00 €
muva-KM-0515	Evaporated Milk 4 % fat Best before: 03/2021	Fat Dry matter Protein Ash Phosphorus	g/100g g/100g g/100g g/100g mg/kg	4,08 24,30 7,06 1,52 2038	400 g	27,00 €
NEW muva-KM-0516	Coffee Cream 10 % fat Best before: 03/2021	Fat Dry matter Protein Ash Phosphorus	g/100g g/100g g/100g g/100g mg/kg	10,10 18,47 3,20 0,67 841,2	100 ml	27,00 €
NEW muva-KM-0517	Evaporated Milk 8 % fat Best before: 03/2022	Fat Dry matter Protein Ash Phosphorus	g/100g g/100g g/100g g/100g mg/kg	8,12 25,88 6,12 1,30 1644	170 g	27,00 €
CREAM						
muva-R-0437	UHT-Cream 30 % fat Best before: 01/2020	Fat Dry matter Protein	g/100g g/100g g/100g	30,21 36,83 2,38	100 ml	24,00 €
YOGHURT						
NEW muva-YO-1423	Yoghurt 1,8% fat Best before: 11/2020	Fat Dry matter Protein Lactic acid pH value	g/100g g/100g g/100g mg/100g /	1,91 14,19 4,83 1023 4,30	500 g	27,00 €
NEW muva-YO-1424	Yoghurt 3,8% fat Best before: 11/2020	Fat Dry matter Protein Lactic acid pH value	g/100g g/100g g/100g mg/100g /	3,87 15,41 4,67 1255 4,03	500 g	27,00 €

DAIRY PRODUCTS

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
CREAM CHEESE						
muva-FK-1226	Cream Cheese 60 % f.i.d.m. Best before: 06/2020	Fat Dry matter Protein Lactose (monohydrate) Chloride Sodium chloride (via Cl) pH value Lactic acid	g/100g g/100g g/100g g/100g mg/100g g/100g / mg /100g	21,85 32,63 5,84 3,09 471 0,78 4,70 459,2	200 g	28,00 €
muva-FK-1227	Cream Cheese 50 % f.i.d.m. Best before: 01/2021	Fat Dry matter Protein Lactose (monohydrate) Chloride Sodium chloride (via Cl) pH value Lactic acid	g/100g g/100g g/100g g/100g mg/100g g/100g / mg /100g	13,57 26,26 7,34 2,71 448 0,74 4,58 548,5	200 g	28,00 €
BUTTER						
muva-BU-1311	Mild Acid Butter Best before: 12/2019	Solids non-fat Water pH Value Cholesterol Butyric acid methyl ester Milk fat	g/100g g/100g / mg/kg g/100g g/100g	1,59 15,41 6,03 2334 3,83 82,22	250 g	29,00 €
muva-BU-1312	Sweet Cream Butter Best before: 12/2019	Solids non-fat Water pH Value Cholesterol Butyric acid methyl ester Milk fat	g/100g g/100g / mg/kg g/100g g/100g	1,61 15,86 6,74 2337 3,73 82,58	250 g	29,00 €
muva-BU-1313	Sweet Cream Butter, salted Best before: 11/2020	Solids non-fat Water pH Value Cholesterol Chloride Sodium chloride (via Cl) Sodium Sodium chloride (via Na) Butyric acid methyl ester Milk fat	g/100g g/100g / mg/kg mg/100g g/100g mg/100g g/100g g/100g g/100g	2,61 15,77 6,48 2317 803 1,32 508 1,29 3,71 81,53	250 g	29,00 €
muva-BU-1314	Sweet Cream Butter, salted Best before: 12/2022	Solids non-fat Water pH Value Cholesterol Chloride Sodium chloride (via Cl) Butyric acid methyl ester	g/100g g/100g / mg/kg mg/100g g/100g g/100g	2,76 16,26 6,50 2276 823 1,36 3,86	250 g	29,00 €

CHEESE

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
PROCESSED CHEESE						
muva-SK-0315	Processed cheese 45 % f.i.d.m. Best before: 4 weeks after shipment	Fat Dry matter Protein Lactose (monohydrate) Ash pH Value Citric Acid Chloride Sodium chloride (via Cl) Sodium Sodium chloride (via Na)	g/100g g/100g g/100g g/100g g/100g / mg/100g mg/100g g/100g mg/100g g/100g	19,43 42,30 15,97 1,29 4,34 5,78 83,5 620 1,02 1068 2,71	250 g	35,50 €
muva-SK-0316	Processed cheese 55 % f.i.d.m. Best before: 4 weeks after shipment	Fat Dry matter Protein Lactose (monohydrate) Ash pH value Total Phosphorus Citric Acid Chloride Sodium chloride (via Cl) Sodium Sodium chloride (via Na)	g/100g g/100g g/100g g/100g g/100g / g/100g mg/100g mg/100g g/100g mg/100g g/100g	25,34 43,38 10,41 3,54 3,18 5,73 0,73 159,3 372 0,61 751 1,91	250 g	35,50 €
muva-SK-0318	Processed cheese 40 % f.i.d.m. Best before: 4 weeks after shipment	Fat Dry matter Protein Lactose (monohydrate) Ash pH value Total phosphorus Citric Acid Chloride Sodium chloride (via Cl) Sodium Sodium chloride (via Na)	g/100g g/100g g/100g g/100g g/100g / g/100g mg/100g mg/100g g/100g mg/100g g/100g	18,94 43,18 17,86 0,53 4,39 5,68 0,85 87,7 694 1,14 1026 2,61	250 g	35,50 €
muva-SK-0319	Processed cheese 45 % f.i.d.m. Best before: 4 weeks after shipment	Fat Dry matter Protein Lactose (monohydrate) Ash pH value Citric Acid Chloride Sodium chloride (via Cl) Sodium Sodium chloride (via Na)	g/100g g/100g g/100g g/100g g/100g / mg/100g mg/100g g/100g mg/100g g/100g	20,21 42,11 14,92 2,05 3,89 5,92 100,6 559 0,92 926 2,35	250 g	35,50 €

CHEESE

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
HARD CHEESE						
muva-HA-1512	Hard cheese (type Emmental Cheese) Best before: 4 weeks after shipment	Fat Dry matter Protein Chloride Sodium chloride (via Cl) pH Value	g/100g g/100g g/100g mg/100g g/100g /	29,58 63,88 29,65 331 0,55 5,53	100 g	30,00 €
NEW muva-HA-1513	Hard cheese (type Emmental Cheese) Best before: 4 weeks after shipment	Fat Dry matter Protein Chloride Sodium chloride (via Cl) pH Value	g/100g g/100g g/100g mg/100g g/100g /	27,20 60,95 27,50 498 0,82 5,59	100 g	30,00 €
ALKALINE PHOSPHATASE IN HARD CHEESE						
muva-HAP-2501	Hard cheese (freeze dried) Best before: 12/2019	Alkaline phosphatase activity	mU/g	1540	ca. 4 g	25,00 €
muva-HAP-2502	Hard cheese (freeze dried) Best before: 12/2019	Alkaline phosphatase activity	mU/g	928	ca. 4 g	25,00 €
muva-HAP-2504	Hard cheese (freeze dried) Best before: 02/2022	Alkaline phosphatase activity	mU/g	636	ca. 4 g	25,00 €

OTHER EDIBLES

Code	Material	Parameter	Unit	Reference value	Packaging unit	Price
CHOCOLATE						
muva-S-0816	Nut-Nougat-Cream Best before: 02/2021	Fat Dry matter Protein Lactose (monohydrate) Saccharose Theobromine	g/100g g/100g g/100g g/100g g/100g mg/kg	31,02 99,38 6,95 4,09 49,83 1877	100 g	31,00 €
NEW muva-S-0818	Whole Milk Chocolate Best before: 03/2023	Fat Milk fat Dry matter Protein Lactose (monohydrate) Saccharose Theobromine	g/100g g/100g g/100g g/100g g/100g g/100g mg/kg	35,67 6,20 99,45 8,44 9,95 39,63 955	ca. 100 g	31,00 €
TINNED SAUSAGE						
muva-BR-1003	Tinned Sausage (Liver Sausage) Best before: 12/2019	Fat Water Protein Chloride Sodium chloride (via Cl) Ash Hydroxyproline Nitrate Total Phosphorus	g/100g g/100g g/100g mg/100g g/100g g/100g g/100g mg/kg mg/100g	29,72 54,42 12,10 1273 2,10 2,59 0,28 70,9 285,1	125 g	36,00 €
muva-BR-1004	Tinned Sausage (Lyoner) Best before: 12/2019	Fat Water Protein Chloride Sodium chloride (via Cl) Ash Hydroxyproline Nitrate Total Phosphorus	g/100g g/100g g/100g mg/100g g/100g g/100g g/100g mg/kg mg/100g	25,53 58,56 12,51 1277 2,10 3,00 0,19 27,6 388,8	125 g	36,00 €
FRUIT JUICE						
muva-FS-1917	Apple Juice Best before: 05/2020	Glucose Fructose Titratable acid pH Value Ethanol Patulin Soluble solids	g/l g/l mmol H ⁺ /l / mg/l µg/l °Brix	23,77 66,55 75,71 3,57 214,7 23,8 11,79	ca. 150 ml	30,00 €
NEW muva-FS-1918	Grape Juice Best before: 10/2021	Glucose Fructose Titratable acid pH Value Soluble solids	g/l g/l mmol H ⁺ /l / °Brix	77,38 82,47 86,06 3,45 17,06	ca. 200 ml	30,00 €

MICROBIOLOGY

Code	Matrix	Parameter*	Unit	Content	Price
MESOPHILIC BACTERIAL COUNT					
muva-MBK-1719	Curd Powder Best before: 06/2020	Mesophilic, aerobic bacterial count	log cfu/g	2,94	23,00 €
muva-MBK-1720	Hard Cheese, freeze-dried Best before: 06/2020	Mesophilic, aerobic bacterial count	log cfu/g	7,32	23,00 €
NEW muva-MBK-1721	Hard Cheese, freeze-dried Best before: 04/2022	Mesophilic, aerobic bacterial count	log cfu/g	6,55	23,00 €
muva-GKZ-1707	Milk, frozen Best before: 01/2020	Total bacterial count	log cfu/g	5,09	30,00
muva-GKZ-1708	Milk, frozen Best before: 01/2020	Total bacterial count	log cfu/g	6,03	30,00
YEASTS / GEOTRICHUM					
muva-MBH-1725	UHT skimmed Milk Best before: 02/2020	Saccharomyces cerevisiae	log cfu/g	3,75	23,00
muva-MBH-1726	UHT skimmed Milk Best before: 02/2020	Saccharomyces cerevisiae	log cfu/g	3,86	23,00
muva-HS-1709	Milk, frozen Best before: 02/2020	Yeasts Geotrichum	log cfu/g log cfu/g	4,94 1,64	33,00
muva-HS-1710	Milk, frozen Best before: 02/2020	Yeasts Geotrichum	log cfu/g log cfu/g	5,86 2,34	33,00
E. COLI / ENTEROBACTERIACEAE / COLIFORMS					
muva-ECE-1709	Milk, frozen Best before: 02/2020	E. coli Enterobacteriaceae Coliforms	log cfu/g	4,26 4,60 4,59	37,00
muva-ECE-1710	Milk, frozen Best before: 02/2020	E. coli Enterobacteriaceae Coliforms	log cfu/g	5,17 5,47 5,46	37,00
COAGULASE POSITIVE STAPHYLOCOCCUS					
muva-ST-1707	Milk, frozen Best before: 12/2019	Coagulase positive Staphylococcus	log cfu/g	4,52	33,00
muva-ST-1708	Milk, frozen Best before: 12/2019	Coagulase positive Staphylococcus	log cfu/g	5,50	33,00

* All materials are strains of the safety group S1 and can be analysed without any restriction

SENSORY

Code	Material	Parameter		Packaging unit	Price
SENSORY RANK ORDER – TASTE					
muva- SeRF-22	Strawberry Milkshake Best before 06/2020	sweet	4 different values of intensity	4 x 100 ml	51,00 €
muva- SeRF-23	Water Best before 06/2020	bitter	4 different values of intensity	4 x 200 ml	51,00 €
SENSORY RANK ORDER - ODOUR					
muva-SeA	Set for rank order with determination of an flavour Best before: 4 weeks after shipment	Solution of flavour (e.g. eugenol, lemon, orange, strawberry, cinnamon etc.)	4 different values of intensity	4 x 10 ml	51,00 €
SENSORY TRIANGLE TEST					
muva- SeD-07	Boiled sausage Best before 12/2019	sweet	3 samples (A/A/B)	3 x 200 g	39,00 €
muva- SeD-10	Boiled sausage Best before 12/2019	Umami	3 samples (A/A/B)	3 x 200 g	39,00 €
SENSORY DLG / ISO 22935					
muva- SeDLG-29	Milk powder Best before 06/2020	without deficiencies	1 sample	1 x 80 g	17,50 €
muva- SeDLG-30	Infant food Best before 06/2020	with deficiencies	1 sample	1 x 80 g	17,50 €

SENSORY



SENSORY TEST KIT „DRINKING WATER“

FOR ASSURANCE OF THE SENSORY PERFORMANCE OF PANELISTS

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 1 for visual testing consisting of 5 tubes with different attributes. (turbidity, particles, discolorations etc.)
- ★ Set 2 for odour testing consisting of 5 aroma sticks with different flavors from the drinking water sector.

Together with the sample materials, you will obtain a data sheet including the relevant decoding.

The aroma stick shall remain sealed for approximately 10 minutes after testing and can be used by this up to 20 times. If the material is stored refrigerated at 6 °C the material is stable for 4 weeks at minimum.

The dispatch of the test kit will be every three-month (Feb., May, Aug. and Nov.). Please state the required month of shipping on the order form.

SENSORY TEST KIT „DRINKING WATER“				
Material	Parameter		Packaging unit	Price
Test kit drinking water case	5 different odours 5 different visual attributes	5 samples 5 samples	1 unit	75,00 €
Refill package odour pens	5 different odours	5 samples	1 package	35,00 €
Refill package visual Test	5 different visual attributes	5 samples	1 package	35,00 €
Single stick / Single test tube	1 odour or 1 visual attribute each	1 sample	1 stick / tube	7,50 €



SENSORY

SENSORY TRAINING MATERIALS

FOR THE TRAINING OF SENSORY ASSESSORS (ACCORDING TO DIN EN ISO 8586)



In the field of sensory testing, the human being with its sensory abilities and skills is the centre of attention as a "measuring instrument". In accordance with DIN EN ISO 8586 / DIN ISO 22935-1, these must be maintained and refined in order to achieve continuously comparable and repeatable results - especially within a group of assessors.

YOUR COMPLETE TRAINING KIT FOR YOUR IN-HOUSE TRAINING

Our sensory training kit contains all the tools and utensils, including exercises for the in-house training of your assessors. You can immediately start with the exercises – according to the norm – to practice your sensory skills.

For this purpose, we have developed new muva sniffing-sticks for the identification and description of odours. Whether smells of well-known foodstuffs or product-specific faults - the muva sniffing-sticks help you to recruit the right assessor, within your in-house training and as a help in the daily quality control.



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

SENSORY TRAINING MATERIAL				
material	parameter	range	packing unit	price **
sniffing sticks ²⁾	Within the aroma-sets you can choose ten different flavours freely. <i>More information about flavour selection at www.muva.de (Sensor technology / Training material >> Order form)</i>	Aroma-set with 10 sticks incl. storage case	1 pack	79,00 €
sniffing sticks ²⁾	refill-set	Aroma-set with 10 sticks without storage case	1 pack	62,00 €
basic tastes	sweet, sour, bitter, salty und umami <i>The training-set includes cups, tools for the production and exercise examples plus tablet pad.</i>	For the training of → 5 persons → 10 persons	1 pack 1 pack	55,00 € 100,00 €
threshold test ³⁾	sweet, sour, bitter, salty <i>The training-set includes cups, tools for the production and exercise examples plus tablet pad.</i>	For the training of → 5 persons → 10 persons	1 pack 1 pack	55,00 € 100,00 €
colour sequences	wet medium: red, yellow, green dry medium: graphite	10th ranking for → wet medium → dry medium	1 pack 1 pack	59,00 € 61,00 €
haptic test	haptic test (10th ranking) with different strength levels	For the training of → 5 persons → 10 persons	1 pack 1 pack	150,00 € 225,00 €

²⁾ When ordering individual sticks outside of the set of 10, a stick will be charged € 6.90.

³⁾ The listed prices for the threshold test include one basic flavor.

TERMS OF PAYMENT AND TRANSPORT

The delivery of the reference materials shall be ex works.

With exception of the reference materials "raw milk" all materials will be shipped at ambient temperatures.

Our list prices are net prices plus VAT (**excluding** companies in the European Union outside Germany who have notified their **VAT identification number** to us) and forwarding charges.

Please transfer **the net amount invoiced within 8 days**.

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

Discount:

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

Terms of delivery for „Raw milk reference materials“:

Raw milk materials will be shipped by MUVA KEMPTEN GMBH separately from other materials in frozen state (express shipping) ex works. The prices are net prices plus postage and packaging. The data sheet contains a clear advice how to handle the material before use.

Shock frozen raw milk can be delivered into foreign countries to only a limited extend, because the carriers take too long and during this time the samples will be expected to be defrosted. We therefore regret to be not able to take any liability for a delivery to a number of countries.

Packaging Costs:

Package size	Number of bottles	Packaging materials	Packaging costs	Credit note for return delivery of packaging materials ²⁾
VP 1	Up to 8 bottles	Polystyrene box + 7 TP ⁴⁾	20,00 €	20,00 €
VP2	Up to 30 bottles	Polystyrene box + 11 TP ⁵⁾	35,00 €	35,00 €

⁴⁾ TP = Thermal packs (cool packs)

⁵⁾ 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)

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Fax-Nr.: +49 (0) 831/5290-197
e-Mail: ring-ref@muva.de

ORDER FORM FOR REFERENCE MATERIALS

Order number: _____

Please send me the following materials:

No. of units	Material	Remarks (e.g. frequency of regular delivery)*

*Delivery is at anytime possible. 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 ino 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



Please use our comprehensive services