

## List of Certified Reference Materials (CRM)

No	Matrix	Elements	Organization	Link
1	ERM-BB184 <b>BOVINE MUSCLE</b> (trace elements)	Arsenic (As), Cadmium (Cd), Copper (Cu), Iron (Fe), Manganese (Mn), Selenium (Se), Zinc (Zn)	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/40455/40461/By-material-matrix/Animal-materials/ERM-BB184-BOVINE-MUSCLE-trace-elements/ERM-BB184">https://crm.jrc.ec.europa.eu/p/40455/40461/By-material-matrix/Animal-materials/ERM-BB184-BOVINE-MUSCLE-trace-elements/ERM-BB184</a>
2	ERM-BB185 <b>BOVINE LIVER</b>	As, Cd, Cu, Mn, Pb, Se, Zn	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-BB185/ERM-BB185-BOVINE-LIVER-trace-elements/ERM-BB185">https://crm.jrc.ec.europa.eu/p/q/ERM-BB185/ERM-BB185-BOVINE-LIVER-trace-elements/ERM-BB185</a>
3	ERM-BB186 <b>PIG KIDNEY</b>	Cd, Cu, Fe, Mn, Pb, Se, Zn Indicative Values: As, Hg Information: Ca, Cl, K, Mg, Na	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-BB186/ERM-BB186-PIG-KIDNEY-trace-elements/ERM-BB186">https://crm.jrc.ec.europa.eu/p/q/ERM-BB186/ERM-BB186-PIG-KIDNEY-trace-elements/ERM-BB186</a>
4	ERM-BB422 <b>FISH MUSCLE</b>	As, Cd, Cu, Fe, Hg, I, Mn, Se, Zn	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-BB422/ERM-BB422-FISH-MUSCLE-trace-elements/ERM-BB422">https://crm.jrc.ec.europa.eu/p/q/ERM-BB422/ERM-BB422-FISH-MUSCLE-trace-elements/ERM-BB422</a>
5	ERM-BD150 <b>SKIMMED MILK</b> <b>POWDER</b>	Ca, Cl, K, Mg, Na, P, Cd, Cu, Fe, Hg, I, Mn, Pb, Se, Zn	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-BD150/ERM-BD150-SKIMMED-MILK-POWDER-trace-elements/ERM-BD150">https://crm.jrc.ec.europa.eu/p/q/ERM-BD150/ERM-BD150-SKIMMED-MILK-POWDER-trace-elements/ERM-BD150</a>
6	ERM-BD151 <b>SKIMMED MILK</b> <b>POWDER</b>	Ca, Cl, K, Mg, Na, P, Cd, Cu, Fe, Hg, I, Mn, Pb, Se, Zn	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-BD151/ERM-BD151-SKIMMED-MILK-POWDER-trace-elements/ERM-BD151">https://crm.jrc.ec.europa.eu/p/q/ERM-BD151/ERM-BD151-SKIMMED-MILK-POWDER-trace-elements/ERM-BD151</a>
7	ERM <sup>®</sup> -BC211 <b>RICE</b>	Total Arsenic , Dimethylarsinic acid, The sum of arsenite and arsenate	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-BC211/ERM-BC211-RICE-As-species/ERM-BC211">https://crm.jrc.ec.europa.eu/p/q/ERM-BC211/ERM-BC211-RICE-As-species/ERM-BC211</a>
8	ERM-BD512 <b>DARK CHOCOLATE</b>	Cd, Cu, Mn, Ni	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-BD512/ERM-BD512-DARK-CHOCOLATE-Cd-Cu-Mn-Ni/ERM-BD512">https://crm.jrc.ec.europa.eu/p/q/ERM-BD512/ERM-BD512-DARK-CHOCOLATE-Cd-Cu-Mn-Ni/ERM-BD512</a>

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9	ERM-CD200 <b>SEAWEED</b> <b>(bladderwrack)</b> <b>(trace elements)</b>	Arsenic (As), Cadmium (Cd), Copper (Cu), Mercury (Hg), Lead (Pb), Selenium (Se), Zinc (Zn)	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/ERM-CD200-SEAWEED-bladderwrack-trace-elements/ERM-CD200">https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/ERM-CD200-SEAWEED-bladderwrack-trace-elements/ERM-CD200</a>
10	ERM-CE101 <b>TROUT MUSCLE</b>	Hg, As, Fe, Mn, Se, Zn	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-CE101/ERM-CE101-TROUT-MUSCLE-trace-elements/ERM-CE101">https://crm.jrc.ec.europa.eu/p/q/ERM-CE101/ERM-CE101-TROUT-MUSCLE-trace-elements/ERM-CE101</a>
11	ERM-CE278k <b>MUSSEL TISSUE</b>	As, Cd, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Rb, Se, Sr, Zn Indicative Values: Ag Information: Co, Ca, Cl, K, Mg, Na	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-CE278k/ERM-CE278k-MUSSEL-TISSUE-elements/ERM-CE278k">https://crm.jrc.ec.europa.eu/p/q/ERM-CE278k/ERM-CE278k-MUSSEL-TISSUE-elements/ERM-CE278k</a>
12	ERM <sup>®</sup> -CD281 <b>RYE GRASS</b>	Arsenic (As), Boron (B) Cadmium (Cd), Chromium (Cr), Copper (Cu), Mercury (Hg), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Lead (Pb), Antimony (Sb), Selenium (Se), Tin (Sn), Zinc (Zn),	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/ERM-CD281-RYE-GRASS-trace-elements/ERM-CD281">https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/ERM-CD281-RYE-GRASS-trace-elements/ERM-CD281</a>
13	ERM <sup>®</sup> -CE464 <b>Tuna Fish</b>	Total Mercury, Methyl mercury (CH <sub>3</sub> Hg <sup>+</sup> )	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/40456/40494/By-analyte-group/Extractable-element-species/ERM-CE464-TUNA-FISH-total-Hg-methylmercury/ERM-CE464">https://crm.jrc.ec.europa.eu/p/40456/40494/By-analyte-group/Extractable-element-species/ERM-CE464-TUNA-FISH-total-Hg-methylmercury/ERM-CE464</a>

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14	BCR <sup>®</sup> -185R <b>BOVINE LIVER (trace elements)</b>	Arsenic (As), Cadmium (Cd), Copper (Cu), Manganese (Mn), Lead (Pb), Selenium (Se), Zinc (Zn)	European Commission – Joint Research Centre Institute for Reference Materials and Measurements (IRMM)	<a href="https://crm.jrc.ec.europa.eu/p/40455/40461/By-material-matrix/Animal-materials/BCR-185R-BOVINE-LIVER-trace-elements/BCR-185R">https://crm.jrc.ec.europa.eu/p/40455/40461/By-material-matrix/Animal-materials/BCR-185R-BOVINE-LIVER-trace-elements/BCR-185R</a>
15	BCR <sup>®</sup> – 191 <b>LYOPHILISED BROWN BREAD</b>	Cadmium (Cd), Lead (Pb), Copper (Cu), Zinc (Zn), Iron (Fe), Manganese (Mn)	European Commission – Joint Research Centre Institute for Reference Materials and Measurements (IRMM)	<a href="https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/BCR-191-BROWN-BREAD-trace-elements/BCR-191">https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/BCR-191-BROWN-BREAD-trace-elements/BCR-191</a>
16	BCR <sup>®</sup> – 679 <b>White Cabbage</b>	Cadmium (Cd), Copper (Cu), Iron (Fe), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Strontium (Sr), Zinc (Zn), Mercury (Hg), Antimony (Sb), Thallium (Tl)	European Commission – Joint Research Centre Institute for Reference Materials and Measurements (IRMM)	<a href="https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/BCR-679-WHITE-CABBAGE-elements/BCR-679">https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/BCR-679-WHITE-CABBAGE-elements/BCR-679</a>
17	BCR <sup>®</sup> -482 <b>LICHEN</b>	Aluminum (Al), Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Mercury (Hg), Nickel (Ni), Lead (Pb), Zinc (Zn)	European Commission – Joint Research Centre Institute for Reference Materials and Measurements (IRMM)	<a href="https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/BCR-482-LICHEN-trace-elements/BCR-482">https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/BCR-482-LICHEN-trace-elements/BCR-482</a>
18	BCR <sup>®</sup> -627 <b>Tuna Fish Tissue</b>	Arsenobetaine, Dimethylarsenic acid, Total Arsenic	European Commission – Joint Research Centre Institute for Reference Materials and Measurements (IRMM)	<a href="https://crm.jrc.ec.europa.eu/p/40456/40494/By-analyte-group/Extractable-element-species/BCR-627-TUNA-FISH-TISSUE-As-species/BCR-627">https://crm.jrc.ec.europa.eu/p/40456/40494/By-analyte-group/Extractable-element-species/BCR-627-TUNA-FISH-TISSUE-As-species/BCR-627</a>

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No	Matrix	Elements	Organization	Link
19	IRMM-804 <b>Rice Flour</b>	Arsenic (As), Cadmium (Cd), Copper (Cu), Manganese (Mn), Lead (Pb), ,Zinc (Zn)	Unit for Reference Materials EC-JRC-IRMM	<a href="https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/IRMM-804-RICE-FLOUR/IRMM-804">https://crm.jrc.ec.europa.eu/p/40455/40460/By-material-matrix/Plant-materials/IRMM-804-RICE-FLOUR/IRMM-804</a>
20	ERM-AC626 <b>Arsenobetaine in water</b>	Arsenobetaine	European Commission – Joint Research Centre European Reference Materials	<a href="https://crm.jrc.ec.europa.eu/p/q/ERM-AC626/ERM-AC626-ARSENOBETAINE-IN-WATER/ERM-AC626">https://crm.jrc.ec.europa.eu/p/q/ERM-AC626/ERM-AC626-ARSENOBETAINE-IN-WATER/ERM-AC626</a>
21	TORT-3 <b>Lobster Hepatopancreas Reference Material for Trace Metals</b>	Arsenic (As), Cadmium (Cd), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Manganese (Mn), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Selenium (Se), Strontium (Sr), Tin (Sn), Vanadium (V) ,Zinc (Zn), Arsenobetaine (as As), Methylmercury (as Hg)	National Research Council Canada	<a href="https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/tort_3.html">https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/tort_3.html</a>

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22	DOLT-5: <b>Dogfish liver</b>	Arsenic (As), Cadmium (Cd), Calcium (Ca), Cobalt (Co), Copper (Cu), Iron (Fe), Lead (Pb), Magnesium (Mg), Mercury (Hg), Molybdenum (Mo), Potassium (K), Selenium (Se), Silver (Ag), Sodium (Na), Strontium (Sr), Tin (Sn), Vanadium (V) , Zinc (Zn), Arsenobetaine (as As), Aluminium (Al), Nickel (Ni), Chromium (Cr), Methylmercury (as Hg), Manganese, Antimony (Sb), Phosphorus (P), Uranium (U)	National Research Council Canada	<a href="https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/dolt_5.html">https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/dolt_5.html</a>
23	DORM-4 <b>Fish Protein</b>	Arsenic (As), Cadmium (Cd), Calcium (Ca), Chromium (Cr) , Copper (Cu), Iron (Fe), Lead (Pb), Magnesium (Mg), Manganese (Mn), Mercury (Hg), Nickel (Ni), Potassium (K), Selenium (Se), Silver (Ag), Strontium (Sr), Vanadium (V) , Zinc (Zn), Arsenobetaine (as As), Methylmercury (as Hg),Aluminium (Al), Sodium (Na), Tin (Sn), Cobalt (Co), Lithium (Li), Molybdenum(Mo), Phosphorus (P), Uranium (U)	National Research Council Canada	<a href="https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/dorm_4.html">https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/dorm_4.html</a>

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24	LUST-1 <b>Non defatted lobster hepatopanreas</b>	As, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg. Mn, Ni, K, Se, Ag, Sr, Zn	National Research Council Canada	<a href="https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/luts_1.html">https://www.nrc- cnrc.gc.ca/eng/solutions/advisory/crm/certificates/luts_1.html</a>
25	PRON-1 <b>River prawn</b>	As, Arsenobetaine, Pb Reference values: Cd, Ca, Cu, Mg, Hg, K, Se, Na, Sr, Zn	National Research Council Canada	<a href="https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/pron_1.html">https://www.nrc- cnrc.gc.ca/eng/solutions/advisory/crm/certificates/pron_1.html</a>
26	SQID-1 <b>Cuttlefish</b>	As, Cd, Hg, Pb, arsenobetaine Reference values: Ca, Cu, Mg, P, K, Na, Sr, U, Zn, methylmercury Information values: Sb, Cr, Co, Fe, Mn, Mo, Se, Ag, Sn, dimethylarsenic, arsenic (III), arsenic (V)	National Research Council Canada	<a href="https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/crm/certificates/sqid_1.html">https://www.nrc- cnrc.gc.ca/eng/solutions/advisory/crm/certificates/sqid_1.html</a>
27	SRM 1547 <b>Peach Leaves</b>	Aluminum (Al), Arsenic (As), Boron (B), Barium (Ba), Cadmium (Cd), Calcium (Ca), Chlorine (Cl), Copper (Cu), Iron (Fe), Magnesium (Mg), Manganese (Mn), Mercury (Hg), Molybdenum (Mo), Nickel (Ni), Nitrogen (Total, N), Phosphorus (P), Potassium (K), Rubidium (Rb), Selenium (Se), Sodium (Na), Strontium (Sr), Vanadium (V), Zinc (Zn),	National Institute of Standards & Technology	<a href="https://www-s.nist.gov/srmors/view_detail.cfm?srm=1547">https://www-s.nist.gov/srmors/view_ detail.cfm?srm=1547</a>

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No	Matrix	Elements	Organization	Link
28	SRM 1549a <b>Whole Milk Powder</b>	Barium (Ba), Calcium (Ca), Magnesium (Mg), Manganese (Mn), Phosphorus (P), Potassium (K), Selenium (Se), Sodium (Na), Strontium (Sr), Zinc (Zn), Copper (Cu), Iodine (I), Iron (Fe), Molybdenum (Mo), Nickel (Ni)	National Institute of Standards & Technology	<a href="https://www-s.nist.gov/srmors/view_detail.cfm?srm=1549A">https://www-s.nist.gov/srmors/view_detail.cfm?srm=1549A</a>
29	SRM 1570 a <b>Trace Elements in Spinach Leaves</b>	Calcium (Ca), Phosphorus (P), Potassium (K), Sodium (Na), Aluminum (Al), Arsenic (As), Boron (B), Cadmium (Cd), Cobalt (Co), Copper (Cu), Manganese (Mn), Mercury (Hg), Nickel (Ni), Selenium (Se), Potassium (K), Rubidium (Rb), Selenium (Se), Strontium (Sr), Thorium (Th), Vanadium (V), Zinc (Zn),	National Institute of Standards & Technology	<a href="https://www-s.nist.gov/srmors/view_detail.cfm?srm=1570A">https://www-s.nist.gov/srmors/view_detail.cfm?srm=1570A</a>

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30	SRM 1573 a <b>Tomato Leaves</b>	Aluminum (Al), Antimony (Sb), Arsenic (As), Boron (B), Cadmium (Cd), Calcium (Ca), Chromium (Cr), Cobalt (Co), Copper (Cu), Iron (Fe), Manganese (Mn), Mercury (Hg), Nitrogen (Total, N), Nickel (Ni), Phosphorus (P), Potassium (K), Rubidium (Rb), Selenium (Se), Sodium (Na), Vanadium (V), Zinc (Zn), Barium (Ba), Bromine (Br), Cerium (Ce), Cesium (Cs), Chlorine (Cl), Gadolinium (Gd), Hafnium (Hf), Hydrogen (H), Iodine (I), Lanthanum (La), Magnesium (Mg), Molybdenum (Mo), Nitrogen (N), Samarium (Sm), Scandium (Sc), Silver (Ag), Strontium (Sr), Sulfur (S), Thorium (Th), Uranium (U)	National Institute of Standards & Technology	<a href="https://www-s.nist.gov/srmors/view_detail.cfm?srm=1573a">https://www-s.nist.gov/srmors/view_detail.cfm?srm=1573a</a>



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31	SRM 1575 a <b>Pine Needles (<i>Pinus taeda</i>)</b>	Calcium (Ca), Phosphorus (P), Potassium (K), Aluminum (Al), Barium (Ba), Cadmium (Cd), Chlorine (Cl), Copper (Cu), Iron (Fe), Mercury (Hg), Rubidium (Rb), Zinc (Zn), Magnesium (Mg) , Arsenic (As), Boron (B), Cesium (Cs), Cobalt (Co), Lead (Pb), Manganese (Mn), Nickel (Ni), Scandium (Sc), Selenium (Se), Sodium (Na), Cerium (Ce)	National Institute of Standards & Technology	<a href="https://www-s.nist.gov/srmors/certificates/1575A.pdf">https://www-s.nist.gov/srmors/certificates/1575A.pdf</a>
32	SRM 3254 <b>Green Tea (<i>Camellia sinensis</i>) Extract</b>	Arsenic (As), Cadmium (Cd), Mercury (Hg), Lead (Pb), Aluminum (Al) Copper (Cu), Iron (Fe), Manganese (Mn), Zinc (Zn),	National Institute of Standards & Technology	<a href="https://www-s.nist.gov/srmors/view_detail.cfm?srm=3254">https://www-s.nist.gov/srmors/view_detail.cfm?srm=3254</a>
33	SRM 3255 <b>Green Tea (<i>Camellia sinensis</i>) Extract</b>	Arsenic (As), Lead (Pb), Aluminum (Al), Copper (Cu), Iron (Fe), Manganese (Mn), Zinc (Zn),	National Institute of Standards & Technology	<a href="https://www-s.nist.gov/srmors/view_cert.cfm?srm=3255">https://www-s.nist.gov/srmors/view_cert.cfm?srm=3255</a>
34	TRM-E-2002 <b>Trace Elements in Drinking Water</b>	Cadmium (Cd) , Copper (Cu), Lead (Pb), Zinc (Zn)	National Institute of Metrology (Thailand) : TRM (Thailand Reference Material) สถาบันมาตรวิทยาแห่งชาติ ติดต่อส่วนบริหารงานลูกค้าสัมพันธ์ (Customer Service) Email : cs@nimt.or.th Tel. 02 577 5100 Fax. 02 577 3659	<a href="http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-E-2002">http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-E-2002</a>

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35	TRM-E-2003 <b>Mercury in Drinking Water</b>	Mercury (Hg)	National Institute of Metrology (Thailand)	<a href="http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-E-2003">http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-E-2003</a>
36	TRM-F-2002 <b>Trace and Essential Elements in Prawn</b>	Cadmium (Cd) , Copper (Cu), Lead (Pb), Zinc (Zn)	National Institute of Metrology (Thailand)	<a href="http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-F-2002">http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-F-2002</a>
37	TRM-F-2003 <b>Arsenic in White Rice Flour</b>	Total arsenic	National Institute of Metrology (Thailand)	<a href="http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-F-2003">http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-F-2003</a>
38	TRM-F-2001 <b>Element in Glutinous Rice Powder</b>	Cadmium (Cd), Chromium (Cr), Manganese (Mn), Zinc (Zn)	National Institute of Metrology (Thailand)	<a href="http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-F-2001">http://calservices.nimt.or.th/etrm/index.php?menu=product&amp;trmcode=TRM-F-2001</a>
39	NMIJ CRM 7405-a <b>Trace Elements and Arsenic Compounds in Seaweed (<i>Hijiki</i>)</b>	Sodium (Na), Potassium (K), Magnesium (Mg), Calcium (Ca), Strontium (Sr), Phosphorus (P), Aluminum (Al), Arsenic (As), Barium (Ba), Cadmium (Cd), Cobalt (Co), Chromium (Cr), Copper (Cu), Iron (Fe), Manganese (Mn) , Nickel (Ni), Lead (Pb), Zinc (Zn)	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://www.researchgate.net/figure/Certified-values-of-NMIJ-CRM-7405-a_tbl4_51869414">https://www.researchgate.net/figure/Certified-values-of-NMIJ-CRM-7405-a_tbl4_51869414</a>
40	NMIJ CRM 7403-a <b>Trace Elements, Arsenobetaine and Methylmercury in Swordfish Tissue</b>	Mn, Fe, Cu, Zn, As, Se, Sr, Cd, Hg, Na, Mg, P, K, Ca, Arsenobetaine, Methylmercury	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7403a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7403a_en.pdf</a>

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41	NMIJ CRM 7406-a <b>Trace Elements in Squid Powder</b>	P, Mg, Ca, Zn, Cu, Sr, As, Fe, Mn, Cd	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7406a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7406a_en.pdf</a>
42	NMIJ CRM 7501-a <b>Trace Elements in White Rice Flour (Cd Level I)</b>	Mn, Fe, Cu, Zn, Cd, Mo, Na, Mg, K, Ca, P	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7501a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7501a_en.pdf</a>
43	NMIJ CRM 7502-a <b>Trace Elements in White Rice Flour (Cd Level II)</b>	Cr, Mn, Fe, Ni, Cu, Zn, As, Rb, Sr, Mo, Cd, Ba, Pb, Na, Mg, P, K, Ca, Inorganic arsenic compound (arsenite +arsenate), Dimethylarsinic acid	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7502a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7502a_en.pdf</a>
44	NMIJ CRM 7503-b <b>Arsenic Compounds and Trace Elements in White Rice Flour</b>	Inorganic arsenic compound (arsenite +arsenate), Dimethylarsinic acid, Zn, Mn, Cu, Fe, Mo, Cd, As	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7503b_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7503b_en.pdf</a>
45	NMIJ CRM 7505-a <b>Trace Elements in Tea Leaf Powder</b>	Ca, K, Mg, P, Al, B, Ba, Cd, Cu, Fe, Li, Mn, Na, Ni, Pb, Rb, Sr, Zn, Co, Ti, V, Cr, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7505a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7505a_en.pdf</a>
46	NMIJ CRM 7511-a <b>Trace Elements in Soybean</b>	Ca, K, Mg, P, Cd, Cu, Fe, Zn	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7511a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7511a_en.pdf</a>

## List of Certified Reference Materials (CRM)

No	Matrix	Elements	Organization	Link
47	NMIJ CRM 7512-a <b>Trace Elements in Milk Powder</b>	Ca, Fe, K, Mg, Na, P, Ba, Cu, Mn, Mo, Rb, Sr, Zn	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7512a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7512a_en.pdf</a>
48	NMIJ CRM 7531-a <b>Cadmium in Brown Rice Flour</b>	Mn, Fe, Cu, Zn, As, Cd	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7531a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7531a_en.pdf</a>
49	NMIJ CRM 7532-a <b>Arsenic Compounds and Trace Elements in Brown Rice Flour</b>	Inorganic arsenic compound (arsenite +arsenate), Dimethylarsinic acid, Mg, Ca, Mn, Fe, Cu, Zn, As, Cd	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7532a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7532a_en.pdf</a>
50	NMIJ CRM 7533-a <b>Arsenic Compounds and Trace Elements in Brown Rice Flour</b>	Inorganic arsenic compound (arsenite +arsenate), Dimethylarsinic acid, Mg, Ca, Mn, Fe, Cu, Zn, As, Cd	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7533a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7533a_en.pdf</a>
51	NMIJ CRM 7202-c <b>Trace Elements in River Water (Elevated Level)</b>	B, Al, Cr, Mn, Fe, Ni, Cu, Zn, As, Se, Rb, Sr, Mo, Cd, Sb, Ba, Pb, Na, Mg, K, Ca	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/60/7202c_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/60/7202c_en.pdf</a>
52	NMIJ CRM 7203-a <b>Tap Water for Heavy Metals (Elevated Level)</b>	Al, As, B, Cd, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Rb, Sb, Se, Sr, Zn, Ca, K, Mg, Na	National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan	<a href="https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7203a_en.pdf">https://unit.aist.go.jp/nmij/english/refmate/crm/certificate_sds/61/7203a_en.pdf</a>

## List of Certified Reference Materials (CRM)

No	Matrix	Elements	Organization	Link
53	GBW07605 <b>Tea</b>	Ag, As, Al, Ba, Cd, Ce, Cu, Be, Fe, La, Bi, Mn, Ca, Na, Ni, Pb, Rb, Sb, Se, Th, Sr, Zn, Dy, Eu, F, Gd, Hf, Br, Co, Ho, Cr, K, Cs, Hg, Sc, Li, Sm, Lu, Ti, Mg, Mo, N, Nd, P, Pr, S, Sr, Tb, V, Y, Yb	National Institute of Metrology, China : National Sharing Platform for Reference Materials	<a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=7540">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=7540</a> <a href="https://www.ncrm.org.cn/English/CRM/pdf/GBW07605_20160301_141229758_1692408.pdf">https://www.ncrm.org.cn/English/CRM/pdf/GBW07605_20160301_141229758_1692408.pdf</a>
54-57	GBW10115 GBW10116 GBW10117 GBW10118 <b>10 Elements in Milk Powder</b>	Al, Cr, Ni, Cu, As, Se, Cd, I, Hg, Pb	National Institute of Metrology, China : National Sharing Platform for Reference Materials	<a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10015">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10015</a> <a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10016">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10016</a> <a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10017">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10017</a> <a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10018">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10018</a>
58-61	GBW10119 GBW10120 GBW10121 GBW10122 <b>Al in Vermicelli</b>	Al	National Institute of Metrology, China : National Sharing Platform for Reference Materials	<a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10019">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10019</a> <a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10020">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10020</a> <a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10021">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10021</a> <a href="https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10022">https://www.ncrm.org.cn/Web/OrderingEn/MaterialDetail?autoID=10022</a>
62	NMIA MX009 <b>Trace Element in Freeze-Dried Prawn Tissue</b>	Hg Information value: As, Ba, Ca, Cd, Co, Cu, Fe, K, Mg, Mn, Na, P, Pb, Se, Zn	Australian Government National Measurement Institute: National Measurement Institute Australia	<a href="https://www.industry.gov.au/sites/default/files/nmi/chemical-reference/mx009_2017_04_0.pdf">https://www.industry.gov.au/sites/default/files/nmi/chemical-reference/mx009_2017_04_0.pdf</a>