Test report

T-24034633-06-R1

Verify Report

Overall result — Pass

Please refer to the following pages for test result summary and notes.

Client information

Client: RICHARTZ GmbH
Address: Merscheider Straße 94
Solingen
42699
Germany

Sample information

Description: Multi-Tool
Country of origin: -
Country of distribution: Canada; China; Germany; United States; Europe
Quantity submitted: 6 sets + 1 lot parts
Labeled age grade: -
Tested age grade: -

General information

Sample receipt date: 24-Jul-2024
Testing period: 08-Aug-2024 to 09-Aug-2024
16-Aug-2024 to 26-Aug-2024
03-Sep-2024 to 10-Sep-2024
Report date: 11-Sep-2024

QIMA Hansecontrol Testing Service (Dongguan) Co. Ltd.

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Result summary

At the request of the client, the following test were conducted:

Test(s) conducted	Conclusion
Regulation (EC) No 1907/2006 REACH Annex XVII Item 72, Certain Substances Classified as Carcinogenic, Mutagenic or Toxic for Reproduction (CMR) - Polycyclic Aromatic Hydrocarbon (PAH)	Pass
German Product Safety Act (ProdSG) Article 21 (1) No. 3, Polycyclic Aromatic Hydrocarbon (PAH)	Pass
LFGB Section 30, 31 - German Food, Commodities and Feed Code Sensory Test	Pass
German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB) Section 30 and BfR recommendation, Metals and Alloys Used in Food Contact Materials – Extractable 21 elements	Pass
Council of Europe Resolution CM/Res(2013)9, Metals and Alloys Used in Food Contact Materials – Extractable 21 elements	Pass
Canadian Products Containing Mercury Regulations SOR/2014-254, Total Mercury Content	Pass
FDA GRAS Specifications, Total Chromium in Stainless Steel Food Contact Utensils	Pass
California Proposition 65, Total Lead in Substrate Materials	Pass
Regulation (EC) No 1907/2006 REACH Annex XVII Item 72, Certain Substances Classified as Carcinogenic, Mutagenic or Toxic for Reproduction (CMR) - Phthalates	Pass
Regulation (EC) No. 1907/2006 REACH Annex XVII as Amended, Item 51 Phthalates – Non-Mouthable (DBP, BBP, DEHP, DIBP)	Pass
Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials	Pass
Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 27 Nickel Release – Direct and Prolonged Contact with Skin	Pass
Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Substrate Materials	Pass
GB 4806.9-2023 National Standard for Food Safety Metal Materials and Products Contact with Food - Articles 4.1.3 Total Heavy Metals Content	Pass
GB 4806.9-2023 National Standard for Food Safety Metal Materials and Products Contact with Food - Articles 4.3.1 Specific Migration of Heavy Metals	Pass
GB 4806.9-2023 National Standard for Food Safety Metal Materials and Products Contact with Food - Articles 4.3.2 Specific Migration of Heavy Metals in Alloy Article	Pass
GB 4806.9-2023 National Standard for Food Safety Metal Materials and Products Contact with Food - Articles 4.2 Sensory Requirements	Pass
Canadian Consumer Products Containing Lead Regulations (SOR/2018-83), Total Lead Content	Pass
California Proposition 65, Total Cadmium in Substrate Materials	Pass
California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)	Pass
Regulation (EC) No. 2019/1021 Persistent Organic Pollutants Annex I, Short Chain Chlorinated Paraffins C10-C13	Pass

Remark:
By client's request, selected components were tested.

Detailed results

Regulation (EC) No 1907/2006 REACH Annex XVII Item 72, Certain Substances Classified as Carcinogenic, Mutagenic or Toxic for Reproduction (CMR) - Polycyclic Aromatic Hydrocarbon (PAH)

Test Method: AFPS GS 2019:01
Analytical Method: Gas Chromatography-Mass Spectrometer (GC-MS)

Specimen No.		6	7+8	---	---	**Limit (mg/kg)**
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Benzo [a] pyrene (BaP)	50-32-8	ND	ND	---	---	**1**
Benzo [e] pyrene (BeP)	192-97-2	ND	ND	---	---	**1**
Benzo [a] anthracene (BaA)	56-55-3	ND	ND	---	---	**1**
Chrysene (CHR)	218-01-9	ND	ND	---	---	**1**
Benzo [b] fluoranthene (BbFA)	205-99-2	ND	ND	---	---	**1**
Benzo [j] fluoranthene (BjFA)	205-82-3	ND	ND	---	---	**1**
Benzo [k] fluoranthene (BkFA)	207-08-9	ND	ND	---	---	**1**
Dibenz[a,h] anthracene (DBAhA)	53-70-3	ND	ND	---	---	**1**
Conclusion		Pass	Pass	---	---	

Note:
mg/kg (Milligrams per kilogram) = ppm (Parts per million)
LT = Less than
ND = Not detected (Reporting Limit = 0.2 mg/kg)

Detailed results

German Product Safety Act (ProdSG) Article 21 (1) No. 3, Polycyclic Aromatic Hydrocarbon (PAH)

Test Method: AfPS GS 2019:01 PAK
Analytical Method: Gas Chromatography with Mass Spectrometry

Category 2b: Materials coming into long-term contact (more than 30 seconds) or short-term repetitive contact with skin during the intended or foreseeable use (For other consumer products)

Specimen No.		6	7+8	---	---	**Limit (mg/kg)**
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Benzo (a) pyrene	50-32-8	ND	ND	---	---	**0.5**
Benzo (e) pyrene	192-97-2	ND	ND	---	---	**0.5**
Benzo (a) anthracene	56-55-3	ND	ND	---	---	**0.5**
Benzo (b) fluoranthene	205-99-2	ND	ND	---	---	**0.5**
Benzo (j) fluoranthene	205-82-3	ND	ND	---	---	**0.5**
Benzo (k) fluoranthene	207-08-9	ND	ND	---	---	**0.5**
Chrysene	218-01-9	ND	ND	---	---	**0.5**
Dibenzo (a,h) anthracene	53-70-3	ND	ND	---	---	**0.5**
Benzo (g,h,i) perylene	191-24-2	ND	ND	---	---	**0.5**
Indeno (1,2,3-cd) pyrene	193-39-5	ND	ND	---	---	**0.5**
Phenanthrene	85-01-8	ND	ND	---	---	
Pyrene	129-00-0	ND	ND	---	---	
Anthracene	120-12-7	ND	ND	---	---	
Fluoranthene	206-44-0	ND	ND	---	---	
	Sum of Phenanthrene, Pyrene, Anthracene, Fluoranthene	ND	ND	---	---	**10**
Naphthalene	91-20-3	0.2	0.3	---	---	**2**
	Sum of 15 PAHs	0.2	0.3	---	---	**10**
	Conclusion	Pass	Pass	---	---	

Note:
mg/kg = Milligrams per kilogram
LT = Less than
ND = Not detected (Reporting Limit = 0.2 mg/kg)

Detailed results

LFGB Section 30, 31 - German Food, Commodities and Feed Code
Sensory Test

Test Method: DIN 10955:2004

Specimen No.	17	---	---	---	
Test Item	Result	Result	Result	Result	**Limit**
Odour	0	---	---	---	**2.5**
Taste	0	---	---	---	**2.5**
Conclusion	Pass	---	---	---	

Scale evaluation:
0: No perceptible odour / taste
1: Just perceptible odour / taste (Difficult to define)
2: Low perceptible odour / taste
3: Moderately strong odour /taste
4: Strong odour / taste

Detailed results

German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB) Section 30 and BfR recommendation, Metals and Alloys Used in Food Contact Materials – Extractable 21 elements

Test Method: In-House Method
Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Test Condition:
Simulant: 5g/L citric acid Temperature: 70°C Duration: 0.5 hour

Specimen No.	20		RL (mg/kg)	1st+2nd Migration Limit (mg/kg)	3rd Migration Limit (mg/kg)
Test Item	1st+2nd Migration (mg/kg)	3rd Migration (mg/kg)			
Aluminum (Al)	ND	ND	**0.5**	**35**	**5**
Antimony (Sb)	ND	ND	**0.02**	**0.28**	**0.04**
Arsenic (As)	ND	ND	**0.002**	**0.014**	**0.002**
Barium (Ba)	ND	ND	**0.25**	**8.4**	**1.2**
Beryllium (Be)	ND	ND	**0.01**	**0.07**	**0.01**
Cadmium (Cd)	ND	ND	**0.005**	**0.035**	**0.005**
Chromium (Cr)	0.16	ND	**0.1**	**1.75**	**0.25**
Cobalt (Co)	ND	ND	**0.01**	**0.14**	**0.02**
Copper (Cu)	ND	ND	**0.5**	**28**	**4**
Iron (Fe)	13.4	ND	**5**	**280**	**40**
Lead (Pb)	ND	ND	**0.01**	**0.07**	**0.01**
Lithium (Li)	ND	ND	**0.02**	**0.336**	**0.048**
Manganese (Mn)	ND	ND	**0.5**	**12.6**	**1.8**
Mercury (Hg)	ND	ND	**0.003**	**0.021**	**0.003**
Molybdenum (Mo)	ND	ND	**0.05**	**0.84**	**0.12**
Nickel (Ni)	0.37	ND	**0.05**	**0.98**	**0.14**
Silver (Ag)	ND	ND	**0.05**	**0.56**	**0.08**
Thallium (Tl)	ND	ND	**0.0001**	**0.0007**	**0.0001**
Tin (Sn)	ND	ND	**5**	**700**	**100**
Vanadium (V)	ND	ND	**0.01**	**0.07**	**0.01**
Zinc (Zn)	ND	ND	**1**	**35**	**5**
Conclusion	Pass				

Note:
mg/kg = Milligrams per kilogram foodstuff
LT = Less than
ND = Not detected. Result value is less than reporting limit (RL).

Detailed results

Council of Europe Resolution CM/Res(2013)9, Metals and Alloys Used in Food Contact Materials – Extractable 21 elements

Test Method: In-House Method
Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Test Condition:
Simulant: 5g/L citric acid Temperature: 70°C Duration: 0.5 hour

Specimen No.	20				
Test Item	1st+2nd Migration (mg/kg)	3rd Migration (mg/kg)	**RL (mg/kg)**	**1st+2nd Migration Limit (mg/kg)**	**3rd Migration Limit (mg/kg)**
Aluminum (Al)	ND	ND	**0.5**	**35**	**5**
Antimony (Sb)	ND	ND	**0.02**	**0.28**	**0.04**
Arsenic (As)	ND	ND	**0.002**	**0.014**	**0.002**
Barium (Ba)	ND	ND	**0.25**	**8.4**	**1.2**
Beryllium (Be)	ND	ND	**0.01**	**0.07**	**0.01**
Cadmium (Cd)	ND	ND	**0.005**	**0.035**	**0.005**
Chromium (Cr)	0.16	ND	**0.1**	**1.75**	**0.25**
Cobalt (Co)	ND	ND	**0.01**	**0.14**	**0.02**
Copper (Cu)	ND	ND	**0.5**	**28**	**4**
Iron (Fe)	13.4	ND	**5**	**280**	**40**
Lead (Pb)	ND	ND	**0.01**	**0.07**	**0.01**
Lithium (Li)	ND	ND	**0.02**	**0.336**	**0.048**
Manganese (Mn)	ND	ND	**0.5**	**12.6**	**1.8**
Mercury (Hg)	ND	ND	**0.003**	**0.021**	**0.003**
Molybdenum (Mo)	ND	ND	**0.05**	**0.84**	**0.12**
Nickel (Ni)	0.37	ND	**0.05**	**0.98**	**0.14**
Silver (Ag)	ND	ND	**0.05**	**0.56**	**0.08**
Thallium (Tl)	ND	ND	**0.0001**	**0.0007**	**0.0001**
Tin (Sn)	ND	ND	**5**	**700**	**100**
Vanadium (V)	ND	ND	**0.01**	**0.07**	**0.01**
Zinc (Zn)	ND	ND	**1**	**35**	**5**
Conclusion	Pass				

Note:
mg/kg = Milligrams per kilogram foodstuff
LT = Less than
ND = Not detected. Result value is less than reporting limit (RL).

Detailed results

Canadian Products Containing Mercury Regulations SOR/2014-254, Total Mercury Content

Test Method: ASTM F963-17 Clause 8.3.1
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	6+7+8	10	11	13	14	**Total Limit (ppm)**
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Mercury (Hg)	ND	ND	ND	ND	ND	**1000**
Conclusion	Pass	Pass	Pass	Pass	Pass	

Specimen No.	15	16	18	19	20	**Total Limit (ppm)**
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Mercury (Hg)	ND	ND	ND	ND	ND	**1000**
Conclusion	Pass	Pass	Pass	Pass	Pass	

Note:
ppm (Parts per million) = mg/kg (Milligrams per kilogram)
LT = Less than
ND = Not detected (Reporting Limit = 20 ppm)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Detailed results

FDA GRAS Specifications, Total Chromium in Stainless Steel Food Contact Utensils

Test Method: In-House Method
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	20	---	---	---	---	
Test Item	Result (% m/m)	Result (% m/m)	Result (% m/m)	Result (% m/m)	Result (% m/m)	**Limit (% m/m)**
Total Chromium (Cr)	14.9	---	---	---	---	**GT 10.5**
Conclusion	Pass	---	---	---	---	

Note:
% m/m = Percent by mass
GT = Greater than

Detailed results

California Proposition 65, Total Lead in Substrate Materials

Test Method: CPSC-CH-E1001-08.3 (Metal), CPSC-CH-E1002-08.3 (Non-Metal)
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	6+7+8	10	11	13	14	**Total Limit (ppm)**
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	36	43	36	48	**100**
Conclusion	Pass	Pass	Pass	Pass	Pass	

Specimen No.	15	16	18	19	---	**Total Limit (ppm)**
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	76	36	34	27	---	**100**
Conclusion	Pass	Pass	Pass	Pass	---	

Note:
ppm (Parts per million) = mg/kg (Milligrams per kilogram)
LT = Less than
ND = Not detected (Reporting Limit = 20 ppm)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Remark:
The specification is quoted from client's requirement.

Detailed results

Regulation (EC) No 1907/2006 REACH Annex XVII Item 72, Certain Substances Classified as Carcinogenic, Mutagenic or Toxic for Reproduction (CMR) - Phthalates

Test Method: In-House Method
Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		6+7+8	---	---	---	**Limit (mg/kg)**
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
1,2-Benzenedicarboxylic acid, di-C 6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	ND	---	---	---	**1000**
Bis(2-methoxyethyl) phthalate	117-82-8	ND	---	---	---	**1000**
Diisopentylphthalate	605-50-5	ND	---	---	---	**1000**
Di-n-pentyl phthalate (DPP)	131-18-0	ND	---	---	---	**1000**
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	---	---	---	**1000**
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	---	---	---	**1000**
Dibutyl phthalate (DBP)	84-74-2	ND	---	---	---	**1000**
Benzyl butyl phthalate (BBP)	85-68-7	ND	---	---	---	**1000**
Diisobutyl phthalate (DIBP)	84-69-5	ND	---	---	---	**1000**
The sum of above 9 phthalates		ND	---	---	---	**1000**
Conclusion		Pass	---	---	---	

Note:
mg/kg (Milligrams per kilogram) = ppm (Parts per million)
LT = Less than
ND = Not detected (Reporting Limit = 150 mg/kg)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Detailed results

Regulation (EC) No. 1907/2006 REACH Annex XVII as Amended, Item 51 Phthalates – Non-Mouthable (DBP, BBP, DEHP, DIBP)

Test Method: CPSC-CH-C1001-09.4
Test Instrument: Gas Chromatography with Mass Spectrometry

Specimen No.		6+7+8	---	---	**Limit (% w/w)**
Test Item	CAS No.	Result (% w/w)	Result (% w/w)	Result (% w/w)	
Dibutyl Phthalate (DBP)	84-74-2	ND	---	---	**0.1**
Benzyl Butyl Phthalate (BBP)	85-68-7	ND	---	---	**0.1**
Di-(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	ND	---	---	**0.1**
Diisobutyl Phthalate (DIBP)	84-69-5	ND	---	---	**0.1**
Sum of DBP, BBP, DEHP, DIBP		ND	---	---	**0.1**
Conclusion		Pass	---	---	

Note:
% w/w = Percent by weight
LT = Less than
ND = Not detected (Reporting Limit = 0.015 % w/w)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Detailed results

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials

Test Method: CPSC-CH-E1001-08.3 (Metal) and/or CPSC-CH-E1002-08.3 (Non-Metal)
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	6+7+8	10	11	13	14	**Limit (mg/kg)**
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	36	43	36	48	**500**
Conclusion	Pass	Pass	Pass	Pass	Pass	

Specimen No.	15	16	18	19	---	**Limit (mg/kg)**
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	76	36	34	27	---	**500**
Conclusion	Pass	Pass	Pass	Pass	---	

Note:
mg/kg = Milligrams per kilogram
LT = Less than
ND = Not detected (Reporting Limit = 20 mg/kg)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Detailed results

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 27 Nickel Release – Direct and Prolonged Contact with Skin

Test Method: EN 12472:2020 and EN 1811:2023
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Direct and Prolonged Contact with Skin

Specimen No.	15			**Limit**
	Trial 1	Trial 2	Trial 3	
Test Item	Result	Result	Result	
Size of Tested Sample Area (cm^2)	4.84	4.84	4.84	
Volume of Test solution Used (mL)	4.9	4.9	4.9	
Nickel result ($\mu g \cdot cm^{-2} \cdot week^{-1}$)	ND	ND	ND	**0.5***
Conclusion	Pass			

Note:
cm^2 = Square centimeters
mL = Millilitres
$\mu g \cdot cm^{-2} \cdot week^{-1}$ = Micrograms per square centimeter per week
LT = Less than
ND = Not detected (Reporting Limit = 0.1 $\mu g \cdot cm^{-2} \cdot week^{-1}$)

Remark:
*According to EN 1811:2023, clause 9.2.2, applying the measurement uncertainty, an article is:
Compliant when the nickel release value is less than or equal to 0.88 $\mu g \cdot cm^{-2} \cdot week^{-1}$;
Non-compliant when the nickel release value is greater than 0.88 $\mu g \cdot cm^{-2} \cdot week^{-1}$.

Detailed results

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 27 Nickel Release – Direct and Prolonged Contact with Skin

Test Method: EN 12472:2020 and EN 1811:2023
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Direct and Prolonged Contact with Skin

Specimen No.	9-A	9-B	---	**Limit**
Test Item	Result	Result	Result	
Size of Tested Sample Area (cm^2)	1.76	1.76	---	
Volume of Test solution Used (mL)	1.8	1.8	---	
Nickel result ($\mu g \cdot cm^{-2} \cdot week^{-1}$)	0.39	ND	---	**0.5***
Conclusion^	Pass	Pass	---	

Specimen No.	12-A	12-B	---	**Limit**
Test Item	Result	Result	Result	
Size of Tested Sample Area (cm^2)	1.73	1.73	---	
Volume of Test solution Used (mL)	1.8	1.8	---	
Nickel result ($\mu g \cdot cm^{-2} \cdot week^{-1}$)	0.17	0.13	---	**0.5***
Conclusion^	Pass	Pass	---	

Note:
cm^2 = Square centimeters
mL = Millilitres
$\mu g \cdot cm^{-2} \cdot week^{-1}$ = Micrograms per square centimeter per week
LT = Less than
ND = Not detected (Reporting Limit = 0.1 $\mu g \cdot cm^{-2} \cdot week^{-1}$)

Remark:
*According to EN 1811:2023, clause 9.2.2, applying the measurement uncertainty, an article is:
Compliant when the nickel release value is less than or equal to 0.88 $\mu g \cdot cm^{-2} \cdot week^{-1}$;
Non-compliant when the nickel release value is greater than 0.88 $\mu g \cdot cm^{-2} \cdot week^{-1}$.

^Compliance is evaluated on submitted 2 samples as client cannot provide 3 samples for testing.

Detailed results

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 27 Nickel Release – Direct and Prolonged Contact with Skin

Test Method: EN 12472:2020 and EN 1811:2023
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Direct and Prolonged Contact with Skin

Specimen No.	16-A	16-B	---	**Limit**
Test Item	Result	Result	Result	
Size of Tested Sample Area (cm^2)	9.29	9.29	---	
Volume of Test solution Used (mL)	9.3	9.3	---	
Nickel result ($\mu g \cdot cm^{-2} \cdot week^{-1}$)	ND	ND	---	**0.5***
Conclusion^	Pass	Pass	---	

Specimen No.	17-A	17-B	---	**Limit**
Test Item	Result	Result	Result	
Size of Tested Sample Area (cm^2)	9.03	9.03	---	
Volume of Test solution Used (mL)	9.1	9.1	---	
Nickel result ($\mu g \cdot cm^{-2} \cdot week^{-1}$)	ND	ND	---	**0.5***
Conclusion^	Pass	Pass	---	

Note:
cm^2 = Square centimeters
mL = Millilitres
$\mu g \cdot cm^{-2} \cdot week^{-1}$ = Micrograms per square centimeter per week
LT = Less than
ND = Not detected (Reporting Limit = 0.1 $\mu g \cdot cm^{-2} \cdot week^{-1}$)

Remark:
*According to EN 1811:2023, clause 9.2.2, applying the measurement uncertainty, an article is:
Compliant when the nickel release value is less than or equal to 0.88 $\mu g \cdot cm^{-2} \cdot week^{-1}$;
Non-compliant when the nickel release value is greater than 0.88 $\mu g \cdot cm^{-2} \cdot week^{-1}$.

^Compliance is evaluated on submitted 2 samples as client cannot provide 3 samples for testing.

Detailed results

Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Substrate Materials

Test Method: ASTM F963-23 Clause 8.3.1
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	6+7+8	---	---	---	---	
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	**Limit (mg/kg)**
Total Cadmium (Cd)	ND	---	---	---	---	**100**
Conclusion	Pass	---	---	---	---	

Note:
mg/kg = Milligrams per kilogram
LT = Less than
ND = Not detected (Reporting Limit = 20 mg/kg)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Detailed results

GB 4806.9-2023 National Standard for Food Safety Metal Materials and Products Contact with Food - Articles 4.1.3 Total Heavy Metals Content

Test Method: GB 31604.49-2023
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	20	---	---	---	---	**Limit (% w/w)**
Test Item	Result (% w/w)	Result (% w/w)	Result (% w/w)	Result (% w/w)	Result (% w/w)	
Total Arsenic (As)	0.005	---	---	---	---	**0.01**
Total Cadmium (Cd)	ND	---	---	---	---	**0.01**
Total Lead (Pb)	ND	---	---	---	---	**0.01**
Conclusion	Pass	---	---	---	---	

Note:
mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % w/w (Percent by weight)
LT = Less than
ND = Not detected (Reporting Limit = 0.002 % w/w)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Detailed results

GB 4806.9-2023 National Standard for Food Safety Metal Materials and Products Contact with Food - Articles 4.3.1 Specific Migration of Heavy Metals

Test Method: GB 31604.49-2023
Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Test Condition:
Simulant: 5g/L citric acid Temperature: 70°C Duration: 0.5 hour

Specimen No.	20	---	---	RL (mg/kg)	Migration Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)		
Arsenic (As)	ND	---	---	0.002	0.002
Cadmium (Cd)	ND	---	---	0.002	0.002
Lead (Pb)	ND	---	---	0.01	0.01
Antimony (Sb)	ND	---	---	0.04	0.04
Conclusion	Pass	---	---		

Note:
°C = Degree Celsius
mg/kg = Milligrams per kg foodstuff
ND = Not detected. Result value is less than reporting limit (RL).

Detailed results

GB 4806.9-2023 National Standard for Food Safety Metal Materials and Products Contact with Food - Articles 4.3.2 Specific Migration of Heavy Metals in Alloy Article

Test Method: GB 31604.49-2023
Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Test Condition:
Simulant: 5g/L citric acid Temperature: 70°C Duration: 0.5 hour

Specimen No.	20	---	---	RL (mg/kg)	Migration Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)		
Aluminum (Al)	ND	---	---	1	1
Chromium (Cr)	ND	---	---	0.25	0.25
Cobalt (Co)	ND	---	---	0.02	0.02
Copper (Cu)	ND	---	---	1	4
Manganese (Mn)	ND	---	---	1	2
Molybdenum (Mo)	ND	---	---	0.12	0.12
Nickel (Ni)	ND	---	---	0.14	0.14
Tin (Sn)	ND	---	---	10	100
Zinc (Zn)	ND	---	---	1	5
Conclusion	Pass	---	---		

Note:
°C = Degree Celsius
mg/kg = Milligrams per kg foodstuff
ND = Not detected. Result value is less than reporting limit (RL).

Detailed results

GB 4806.9-2023 National Standard for Food Safety Metal Materials and Products Contact with Food - Articles 4.2 Sensory Requirements

Specimen No.		17	**Conclusion**
Test Item	Requirements	Result	
Sensory	The surface of contact food should be clean, and the coating should not crack or peel off. The welding part should be clean and free of pores, no cracks and no burrs.	Meet	Pass
Immersion Solution	The immersion solution obtained from the migration test should not odor.	Meet	Pass

Detailed results

Canadian Consumer Products Containing Lead Regulations (SOR/2018-83), Total Lead Content

Test Method: ASTM F963-23 Clause 8.3.1
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	6+7+8	10	11	13	14	
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	**Limit (mg/kg)**
Total Lead (Pb)	ND	36	43	36	48	**90**
Conclusion	Pass	Pass	Pass	Pass	Pass	

Specimen No.	15	16	18	19	---	
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	**Limit (mg/kg)**
Total Lead (Pb)	76	36	34	27	---	**90**
Conclusion	Pass	Pass	Pass	Pass	---	

Note:
mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)
LT = Less than
ND = Not detected (Reporting Limit = 20 ppm)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Detailed results

California Proposition 65, Total Cadmium in Substrate Materials

Test Method: ASTM F963-23 Clause 8.3.1
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	6+7+8	10	11	13	14	**Total Limit (ppm)**
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	**75**
Conclusion	Pass	Pass	Pass	Pass	Pass	

Specimen No.	15	16	18	19	---	**Total Limit (ppm)**
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	---	**75**
Conclusion	Pass	Pass	Pass	Pass	---	

Note:
ppm (Parts per million) = mg/kg (Milligrams per kilogram)
LT = Less than
ND = Not detected (Reporting Limit = 20 ppm)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Remark:
The limit is quoted from client's requirement.

Detailed results

California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)

Test Method: CPSC-CH-C1001-09.4
Test Instrument: Gas Chromatography with Mass Spectrometry

Specimen No.		6+7+8	---	---	---	**Limit (% w/w)**
Test Item	CAS No.	Result (% w/w)	Result (% w/w)	Result (% w/w)	Result (% w/w)	
Dibutyl phthalate (DBP)	84-74-2	ND	---	---	---	**0.1**
Benzyl butyl phthalate (BBP)	85-68-7	ND	---	---	---	**0.1**
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	---	---	---	**0.1**
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	---	---	---	**0.1**
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	---	---	---	**0.1**
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	---	---	---	**0.1**
	Conclusion	Pass	---	---	---	

Note:
% w/w = Percent by weight
LT = Less than
ND = Not detected (Reporting Limit = 0.015 % w/w)
Composite results are based on specimen of least mass resulting in highest potential concentration.

Remark:
The specification is quoted from client's requirement.

Detailed results

Regulation (EC) No. 2019/1021 Persistent Organic Pollutants Annex I, Short Chain Chlorinated Paraffins C10-C13

Test Method: In-House Method
Analytical Method: NCI Gas Chromatography with Mass Spectrometry

Articles*

Specimen No.		6+7+8	---	---	---	
Test Item	CAS No.	Result (%)	Result (%)	Result (%)	Result (%)	**Limit (%)**
Short Chain Chlorinated Paraffins C10-C13 (SCCP)	85535-84-8	ND	---	---	---	**0.15**
	Conclusion	Pass	---	---	---	

Note:
mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)
LT = Less than
ND = Not detected (Reporting Limit = 0.01%)
Composite results are based on specimen of least mass resulting in highest potential concentration.

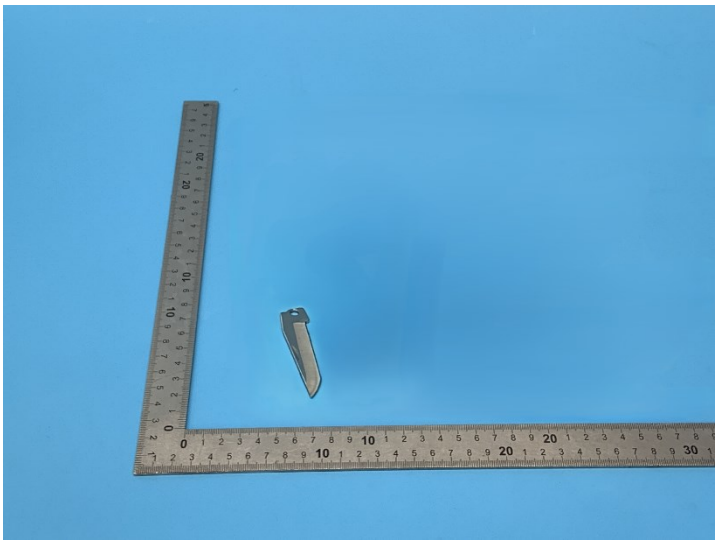
*Article: An object composed of one or more substances and/or preparations which during production is given a specific shape, surface or design determining its end use function to a greater extent than its chemical composition does.

Specimen description

Specimen #	Specimen description	Location
1	Black fabric	Shell of bag
2	Black fabric	Webbing loop
3	Black fabric with black soft plastic	Elastic shell
4	Black fabric with black soft plastic backing	Lining pocket
5	Black/white fabric	Label(<0.2g)
6	Black soft plastic	Driver head holder
7	Black plastic	Handle pad of tool
8	Black plastic	Joint part
9	Pewter plated metal	Snap button cap with socket
10	Pewter plated metal	Snap button cap
11	Pewter plated metal	Snap button socket
12	Pewter plated metal	Snap button stud with washer
13	Pewter plated metal	Snap button stud
14	Pewter plated metal	Snap button washer
15	Black plated metal	Driver head
16	Shiny silver plated metal	Cylindrical tube
17	Gunmetal/silver plated metal	Entire tool
18	Gunmetal plated metal	Main part of tool
19	Silver plated metal	Joint part of tool
20	Silver plated metal	Blade/saw of tool

Pictures

Sample photo:



End of the report