



SUBJECT Chemical Test

TEST LOCATION TÜV SÜD China

TÜV SÜD Products Testing (Shanghai) Co., Ltd.
B-3/4, No.1999 Du Hui Road, Minhang District
Shanghai 201108, P.R. China

CLIENT NAME Ningbo Tianshun Rubber Products Co., Ltd.

CLIENT ADDRESS Yunshan Industrial Zone, Sanqishi Yuyao Zhejiang, China

TEST PERIOD 11-Dec-2020~24-Dec-2020

RESULT SUMMARY

The tested items **complied with** European Resolution Res AP (2004) 4 on rubber products intended to come into contact with foodstuffs.

- Overall migration test **PASS**
- Specific migration of Primary Aromatic Amine **PASS**
- Specific migration of N-nitrosamines and N-nitrosatable substances **PASS**
- Specific Migration of Heavy metal (Al, Ba, Co, Cu, Fe, Li, Mn, Zn, Ni) **PASS**

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Note: (1) General Terms & Conditions as mentioned overleaf. (2) The results relate only to the items tested. (3) The test report shall not be reproduced except in full without the written approval of the laboratory. (4) Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.






RECEIPT DATE / TEST DATE

11-Dec-2020/ 11-Dec-2020

**THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED
BY/ ON BEHALF OF THE CLIENTS AS**

Sample Name: Nitrile Disposable Examination Gloves
Sample Specification: /
Batch No./Date: /
Manufacture: /

| SAMPLE NO. | DESCRIPTION | PHOTOGRAPH |
|------------|-------------|--------------------------------------------------------------------------------------|
| 721660391 | Gloves |  |

TEST RESULT(S)

Note: The migration results in this report were tested and expressed based on single use articles.

1. Overall Migration Test

- Test method: For compliance with Europe Resolution Res AP (2004) 4 on rubber to be used for food contact applications;
- with reference to EN 1186 : Part 5 (Test methods for overall migration into aqueous food simulants by cell)/ SN/T 2817-2011 Food contact materials for export – Polymers – Test methods for overall migration into olive oil simulants by cell
- Migration ratio (S/V): 6dm²/L

| Simulant(s) Used | Test Condition | Result(s) [mg/dm ²] | Maximum Permissible Limit [mg/dm ²] |
|------------------|-------------------|------------------------------------|----------------------------------------------------|
| 10% Ethanol | 40°C for 0.5 hour | 1.05 | 10 |
| 3% Acetic acid | 40°C for 0.5 hour | 0.600 | 10 |
| Olive oil | 40°C for 0.5 hour | <0.500 | 10 |

2. Specific migration of Primary Aromatic Amine

- Test method: With reference to EN 13130-1:2004, followed by Kunststoffe im Lebensmittelverkehr, Book 2, Teil B II,XXI
- Test condition: 3% acetic acid, 40°C for 0.5 hour
- Migration ratio (S/V): 6dm²/L

| Test Item(s) | Result(s) [mg/kg] | Maximum Permissible Limit [mg/kg] |
|------------------------|----------------------|--------------------------------------|
| Primary Aromatic Amine | <0.01 | 0.01 |





3. Specific migration of N-nitrosamines and N-nitrosatable substances

- Test method: Sample preparation with reference to EN 12868:2017, followed by analysis using LC-MS-MS
- Test condition: 3% Acetic acid, 40°C for 0.5 hour

| Test Item(s) | Result(s) [mg/kg] | Detected limit [mg/kg] | Maximum Permissible Limit [mg/kg] | Comment |
|---------------------------|----------------------|---------------------------|--------------------------------------|---------|
| N-nitrosamines | ND | 0.01 | 0.01 | PASS |
| N-nitrosatable substances | ND | 0.1 | 0.1 | PASS |

- Note: 1. ND denotes not detected and less than Detected limit
2. Tested N-nitrosamines are listed below:

| | Compounds name | Abbreviation | CAS# |
|-----|----------------------------------------------------------|----------------|----------------------|
| 1 | N-Nitrosodimethylamine | NDMA | 62-75-9 |
| 2 | N-nitrosodiethylamine | NDEA | 55-18-5 |
| 3/4 | N-nitrosopyrrolidine or N-nitroso N-methyl N-phenylamine | NPYR or NMPPhA | 930-55-2 or 614-00-6 |
| 5 | N-nitrosomorpholine | NMOR | 59-89-2 |
| 6 | N-Nitrosodi-n-propylamine | NDPA | 621-64-7 |
| 7 | N-nitrosopiperidine | NPIP | 100-75-4 |
| 8 | N-nitroso N-ethyl N-phenylamine | NEPhA | 612-64-6 |
| 9 | N-Nitrosodi-n-butylamine | NDBA | 924-16-3 |
| 10 | N-nitrosodibenzylamine | NDBzA | 5336-53-8 |
| 11 | N-Nitrosodiisononylamine | NDiNA | 1207995-62 |
| 12 | N-nitrosomethylethylamine | NMEA | 10595-95-6 |
| 13 | N-nitrosodiisobutylamine | NDiBA | 997-95-5 |

4. Specific Migration of Heavy metals – Al, Ba, Co, Cu, Fe, Li, Mn, Zn, Ni

- Test method: As specified in REGULATION (EU) No 10/2011 and its amendments; with reference to EN 13130-1:2004, followed by ICP-MS.
- Test condition: 3% acetic acid, 40°C for 0.5 hour
- Migration ratio (S/V): 6dm²/L

| Test Item(s) | Result(s) [mg/kg] | Maximum Permissible Limit [mg/kg] |
|--------------|----------------------|--------------------------------------|
| Aluminium | <0.1 | 1 |
| Barium | <0.1 | 1 |
| Cobalt | <0.05 | 0.05 |
| Copper | <0.5 | 5 |
| Iron | <1.0 | 48 |
| Lithium | <0.1 | 0.6 |
| Manganese | <0.05 | 0.6 |
| Zinc | 1.20 | 5 |
| Nickel | <0.002 | 0.02 |

Note: This report is for internal use only such as internal scientific research, education, quality control, product R&D.

-END OF THE TEST REPORT-