

# Test Report

No.: 70.431.26.14971.01

Date: 2026-06-12



**Applicant:** PF CONCEPT INTERNATIONAL COÖPERATIEF U.A.  
**Address:** SCHIPHOLWEG 59 2316 ZL LEIDEN THE NETHERLANDS  
**Item No:** 10644581  
**Description:** Tine 4 in 1 Gravity pen - SL  
**PO No.:** PO#675865  
**Vendor No.:** #10349  
**Factory No.:** #3417  
**Country of Origin:** CHINA  
**Country of Destination:** EU  
**Receipt Date of Sample:** 2026-06-01  
**Date of Testing:** 2026-06-01 ~ 2026-06-12  
**Sample Submitted:** The sample(s) was (were) submitted by applicant and identified.  
**Test Result:** Refer to the data listed in following pages

| Test Item                                                                                                                                                                                                       | Conclusion |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 1. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 63 - Lead Content                                                                                                                                      | Pass       |
| 2. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 23 - Cadmium Content                                                                                                                                   | Pass       |
| 3. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 27 - Nickel Release                                                                                                                                    | Pass       |
| 4. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 50 - Polycyclic Aromatic Hydrocarbons (PAHs)                                                                                                           | Pass       |
| 5. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 51 & 52 - Phthalates Content                                                                                                                           | Pass       |
| 6. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - Phthalates                                                                                                            | Pass       |
| 7. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - Tris(2-chloroethyl) phosphate (TCEP)                                                                                  | Pass       |
| 8. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - 4-[4,4-bis(dimethylamino)benzhydrylidene] cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride(C.I. Basic Violet 3) | Pass       |
| 9. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)                                                                   | Pass       |
| 10. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - Dibutylbis(pentane-2,4dionato-O,O')tin Content                                                                       | <0.1%(W/W) |
| 11. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) -2-methylimidazole Content                                                                                             | <0.1%(W/W) |
| 12. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one                                                             | Pass       |
| 13. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone                                                                  | Pass       |
| 14. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - Tris(4-nonylphenyl, branched and linear) phosphite (TNPP)                                                            | <0.1%(W/W) |

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## Test Item

15. European Parliament and Council Regulation (EU) 2019/1021 on Persistent Organic Pollutants (POPs) - Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)

## Conclusion

Pass

Remarks: 1. MDL = Method Detection Limit  
2. ND = Not Detected (<MDL)  
3. <= Less than  
4. 1 mg/kg = 1 ppm = 0.0001%

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch  
Testing Center

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Unless otherwise agreed upon, Pass or Fail verdicts are given based on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

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## Description of Tested Subject:

| Sample | Description                           | Photo |
|--------|---------------------------------------|-------|
| 001    | Tine 4 in 1 Gravity pen - SL 10644581 |       |

| T. No | Sample | Description                             |
|-------|--------|-----------------------------------------|
| T1    | 002    | Silvery metal (brass, button/grip/tip)  |
| T2    | 003    | Silvery metal (iron, clip)              |
| T3    | 004    | Silvery metal (stainless steel, barrel) |
| T4    | 005    | White soft plastic (TPR, eraser)        |
| T5    | 006    | Black plastic (ABS, clip)               |
| T6    | 007    | White plastic (ABS, inner)              |
| T7    | 008    | Off white plastic (ABS, inner)          |
| T8    | 009    | White plastic (refill)                  |
| T9    | 010    | Black plastic (inner)                   |
| T10   | 011    | Silvery metal (steel spring, inner)     |
| T11   | 012    | Silvery metal (refill)                  |
| T12   | 013    | Brass metal (refill)                    |

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## Test Result(s):

### 1. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 63 - Lead Content

Test with reference to in-house method, determination by ICP-OES.

| Sample      | Unit  | MDL  | Limit | Result(s) | Conclusion |
|-------------|-------|------|-------|-----------|------------|
| 002+003+004 | mg/kg | 10.0 | 500   | ND        | Pass       |
| 005+006+007 | mg/kg | 10.0 | 500   | ND        | Pass       |
| 008+009+010 | mg/kg | 10.0 | 500   | ND        | Pass       |
| 011+012+013 | mg/kg | 10.0 | 500   | ND        | Pass       |

### 2. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 23 - Cadmium Content

Test with reference to EN 1122:2001 Method B, determination by ICP-OES.

| Sample      | Unit  | MDL  | Limit | Result(s) | Conclusion |
|-------------|-------|------|-------|-----------|------------|
| 002+003+004 | mg/kg | 10.0 | 100   | ND        | Pass       |
| 005+006+007 | mg/kg | 10.0 | 100   | ND        | Pass       |
| 008+009+010 | mg/kg | 10.0 | 100   | ND        | Pass       |
| 011+012+013 | mg/kg | 10.0 | 100   | ND        | Pass       |

### 3. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 27 - Nickel Release

Test with reference to EN 12472:2020+EN 1811:2023, determination by ICP-OES.

| Sample | Size of Tested Sample Area (cm <sup>2</sup> ) | Volume of Test Solution Used (mL) | Experimental result(s) (ug/cm <sup>2</sup> /week) | Limit (ug/cm <sup>2</sup> /week) | Conclusion |
|--------|-----------------------------------------------|-----------------------------------|---------------------------------------------------|----------------------------------|------------|
| 002    | 3.20                                          | 3.2                               | <0.1                                              | 0.5                              | Pass       |
|        | 3.20                                          | 3.2                               | <0.1                                              | 0.5                              |            |
|        | 3.20                                          | 3.2                               | <0.1                                              | 0.5                              |            |
| 004    | 24.80                                         | 24.8                              | <0.1                                              | 0.5                              | Pass       |
|        | 24.80                                         | 24.8                              | <0.1                                              | 0.5                              |            |
|        | 24.80                                         | 24.8                              | <0.1                                              | 0.5                              |            |

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## 4. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 50 - Polycyclic Aromatic Hydrocarbons (PAHs)

Test with reference to AfPS GS 2019:01PAK, determination by GC-MS.

| Parameter                      | CAS No.  | Unit  | MDL | Limit | Result(s) |
|--------------------------------|----------|-------|-----|-------|-----------|
|                                |          |       |     |       | 005       |
| Benzo[b]fluoranthene (BbFA)    | 205-99-2 | mg/kg | 0.1 | 1     | ND        |
| Benzo[a]anthracene (BaA)       | 56-55-3  | mg/kg | 0.1 | 1     | ND        |
| Benzo[a]pyrene (BaP)           | 50-32-8  | mg/kg | 0.1 | 1     | ND        |
| Benzo[e]pyrene (BeP)           | 192-97-2 | mg/kg | 0.1 | 1     | ND        |
| Benzo[j]fluoranthene (BjFA)    | 205-82-3 | mg/kg | 0.1 | 1     | ND        |
| Benzo[k]fluoranthene (BkFA)    | 207-08-9 | mg/kg | 0.1 | 1     | ND        |
| Chrysene (CHR)                 | 218-01-9 | mg/kg | 0.1 | 1     | ND        |
| Dibenzo[a,h]anthracene (DBaHA) | 53-70-3  | mg/kg | 0.1 | 1     | ND        |
| Conclusion                     |          |       |     |       | Pass      |

## 5. Regulation (EC) No.1907/2006 (REACH) Annex XVII, Item 51 & 52 - Phthalates Content

Test with reference to in-house method, determination by GC-MS.

| Parameter                          | CAS No.                   | Unit | MDL   | Limit | Result(s) |
|------------------------------------|---------------------------|------|-------|-------|-----------|
|                                    |                           |      |       |       | 005       |
| Bis (2-ethylhexyl) phthalate, DEHP | 117-81-7                  | %    | 0.005 | -     | ND        |
| Dibutyl phthalate, DBP             | 84-74-2                   | %    | 0.005 | -     | ND        |
| Benzyl butyl phthalate, BBP        | 85-68-7                   | %    | 0.005 | -     | ND        |
| Diisobutylphthalate, DIBP          | 84-69-5                   | %    | 0.005 | -     | ND        |
| Sum of DBP, BBP, DEHP, DIBP        | -                         | %    | 0.005 | 0.1   | ND        |
| Di-isononyl phthalate, DINP        | 28553-12-0<br>/68515-48-0 | %    | 0.005 | -     | ND        |
| Di-isodecyl phthalate, DIDP        | 26761-40-0<br>/68515-49-1 | %    | 0.005 | -     | ND        |
| Di-n-octyl phthalate, DNOP         | 117-84-0                  | %    | 0.005 | -     | ND        |
| Sum of DINP, DIDP, DNOP            | -                         | %    | 0.005 | 0.1   | ND        |
| Conclusion                         |                           |      |       |       | Pass      |

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## 6. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - Phthalates

Test with reference to in-house method, determination by GC-MS.

| Parameter                                                                                                                                                    | CAS No.                | Unit | MDL  | Limit | Result(s) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------|------|-------|-----------|
|                                                                                                                                                              |                        |      |      |       | 005       |
| Benzylbutylphthalate (BBP)                                                                                                                                   | 85-68-7                | %    | 0.01 | 0.1   | ND        |
| Bis (2-ethylhexyl) phthalate (DEHP)                                                                                                                          | 117-81-7               | %    | 0.01 | 0.1   | ND        |
| Dibutylphthalate (DBP)                                                                                                                                       | 84-74-2                | %    | 0.01 | 0.1   | ND        |
| Diisobutyl Phthalate (DIBP)                                                                                                                                  | 84-69-5                | %    | 0.01 | 0.1   | ND        |
| 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)                                                                              | 68515-42-4             | %    | 0.01 | 0.1   | ND        |
| 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)                                                                                  | 71888-89-6             | %    | 0.01 | 0.1   | ND        |
| Bis(2-methoxyethyl) phthalate (DMEP)                                                                                                                         | 117-82-8               | %    | 0.01 | 0.1   | ND        |
| 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear                                                                                             | 84777-06-0             | %    | 0.01 | 0.1   | ND        |
| Diisopentylphthalate (DIPP)                                                                                                                                  | 605-50-5               | %    | 0.01 | 0.1   | ND        |
| N-pentyl-isopentylphthalate                                                                                                                                  | 776297-69-9            | %    | 0.01 | 0.1   | ND        |
| Dipentyl phthalate (DPP)                                                                                                                                     | 131-18-0               | %    | 0.01 | 0.1   | ND        |
| Di-n-hexyl phthalate (DnHP/DHP/DHEXP)                                                                                                                        | 84-75-3                | %    | 0.01 | 0.1   | ND        |
| 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear                                                                                             | 68515-50-4             | %    | 0.01 | 0.1   | ND        |
| 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate | 68515-51-5, 68648-93-1 | %    | 0.01 | 0.1   | ND        |
| Dicyclohexyl phthalate(DCHP)                                                                                                                                 | 84-61-7                | %    | 0.01 | 0.1   | ND        |
| Diisohexyl phthalate (DIHxP )                                                                                                                                | 71850-09-4             | %    | 0.01 | 0.1   | ND        |
| Conclusion                                                                                                                                                   |                        |      |      |       | Pass      |

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7. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - Tris(2-chloroethyl) phosphate (TCEP)

Test with reference to in-house method, determination by LC-MS.

| Parameter                      | CAS No.  | Unit | MDL  | Limit | Result(s) |
|--------------------------------|----------|------|------|-------|-----------|
|                                |          |      |      |       | 005       |
| Tris (2-chloroethyl) phosphate | 115-96-8 | %    | 0.01 | 0.1   | ND        |
| Conclusion                     |          |      |      |       | Pass      |

8. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - 4-[4,4-bis(dimethylamino)benzhydrylidene] cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride(C.I. Basic Violet 3)

Test with reference to in-house method, determination by LC-MS.

| Parameter                                                                                                               | CAS No.  | Unit | MDL  | Limit | Result(s) |
|-------------------------------------------------------------------------------------------------------------------------|----------|------|------|-------|-----------|
|                                                                                                                         |          |      |      |       | 005       |
| [4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) | 548-62-9 | %    | 0.01 | 0.1   | ND        |
| Conclusion                                                                                                              |          |      |      |       | Pass      |

9. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)

Test with reference to in-house method, determination by GC-MS.

| Parameter                                           | CAS No.  | Unit  | MDL  | Limit | Result(s) |
|-----------------------------------------------------|----------|-------|------|-------|-----------|
|                                                     |          |       |      |       | 005       |
| 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC) | 119-47-1 | % w/w | 0.01 | 0.1   | ND        |
| Conclusion                                          |          |       |      |       | Pass      |

**10. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - Dibutylbis(pentane-2,4dionato-O,O')tin Content**

Test with reference to in house method and determination by GC-MS.

| Parameter                              | CAS No.                   | Unit  | MDL  | Limit | Result(s)               |
|----------------------------------------|---------------------------|-------|------|-------|-------------------------|
|                                        |                           |       |      |       | 005+006+007+008+009+010 |
| Dibutylbis(pentane-2,4dionato-O,O')tin | 22673-19-4<br>(245-152-0) | % w/w | 0.01 | 0.1   | ND                      |

**11. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) -2-methylimidazole Content**

Test with reference to in house method and determination by GC-MS,HPLC-DAD..

| Parameter         | CAS No.  | Unit  | MDL  | Limit | Result(s)               |
|-------------------|----------|-------|------|-------|-------------------------|
|                   |          |       |      |       | 005+006+007+008+009+010 |
| 2-methylimidazole | 693-98-1 | % w/w | 0.01 | 0.1   | ND                      |

**12. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one**

Test with reference to in house method and determination by GC-MS.

| Parameter                                                | CAS No.    | Unit  | MDL  | Limit | Result(s) |
|----------------------------------------------------------|------------|-------|------|-------|-----------|
|                                                          |            |       |      |       | 005       |
| 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one | 71868-10-5 | % w/w | 0.01 | 0.1   | ND        |
| Conclusion                                               |            |       |      |       | Pass      |



**13. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone**

Test with reference to in house method and determination by GC-MS.

| Parameter                                           | CAS No.     | Unit  | MDL  | Limit | Result(s) |
|-----------------------------------------------------|-------------|-------|------|-------|-----------|
|                                                     |             |       |      |       | 005       |
| 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone | 119313-12-1 | % w/w | 0.01 | 0.1   | ND        |
| Conclusion                                          |             |       |      |       | Pass      |

**14. Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) - Tris(4-nonylphenyl, branched and linear) phosphite (TNPP)**

Test with reference to in house method and determination by GC-MS.

| Parameter                                                 | CAS No. | Unit  | MDL  | Limit | Result(s)               |
|-----------------------------------------------------------|---------|-------|------|-------|-------------------------|
|                                                           |         |       |      |       | 005+006+007+008+009+010 |
| Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) | -       | % w/w | 0.01 | 0.1   | ND                      |

**15. European Parliament and Council Regulation (EU) 2019/1021 on Persistent Organic Pollutants (POPs) - Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)**

Test with reference to in-house method, determination by GC-MS.

| Parameter  | CAS No.    | Unit  | MDL | Limit | Result(s) |
|------------|------------|-------|-----|-------|-----------|
|            |            |       |     |       | 005       |
| SCCP       | 85535-84-8 | mg/kg | 100 | 1500  | ND        |
| Conclusion |            |       |     |       | Pass      |

-End of Test Report-