



Test Report No.: ETR22C04306 Date: 27-Dec-2022 Page: 1 of 16

HENKEL CORPORATION

14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

The following sample(s) was/were submitted and identified by the applicant as:

Sample Submitted By : HENKEL CORPORATION

Sample Name : ADHESIVE Style/Item No. : QMI519

Sample Receiving Date

: 21-Dec-2022

Testing Period : 21-Dec-2022 to 27-Dec-2022

Test Requested : (1) As specified by client,

 As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs,

DBP, BBP, DEHP, DIBP contents in the submitted sample(s).

(2) Please refer to next pages for the other item(s).

Test Results :

Please refer to following pages.

Conclusion

(1) Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Troy Chang / Department Mayager Signed for and on behalf of SGS TAIWAN LTD. Chemical Laboratory - Taipei



PIN CODE: 4484E9A8



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Test Part Description

:

No.1

SILVER COLORED PASTE

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	1
Cadmium (Cd) (CAS No.: 7440-43-9)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	100
Lead (Pb) (CAS No.: 7439-92-1)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Mercury (Hg) (CAS No.: 7439-97-6)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Hexavalent Chromium Cr(VI) (CAS No.: 18540-29-9)	With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.	mg/kg	8	n.d.	1000
Monobromobiphenyl		mg/kg	5	n.d.	-
Dibromobiphenyl		mg/kg	5	n.d.	-
Tribromobiphenyl		mg/kg	5	n.d.	-
Tetrabromobiphenyl		mg/kg	5	n.d.	-
Pentabromobiphenyl		mg/kg	5	n.d.	-
Hexabromobiphenyl		mg/kg	5	n.d.	-
Heptabromobiphenyl		mg/kg	5	n.d.	-
Octabromobiphenyl		mg/kg	5	n.d.	-
Nonabromobiphenyl		mg/kg	5	n.d.	-
Decabromobiphenyl		mg/kg	5	n.d.	-
Sum of PBBs	With reference to IEC 62321-6: 2015,	mg/kg	-	n.d.	1000
Monobromodiphenyl ether	analysis was performed by GC/MS.	mg/kg	5	n.d.	_
Dibromodiphenyl ether		mg/kg	5	n.d.	-
Tribromodiphenyl ether		mg/kg	5	n.d.	-
Tetrabromodiphenyl ether		mg/kg	5	n.d.	-
Pentabromodiphenyl ether		mg/kg	5	n.d.	-
Hexabromodiphenyl ether		mg/kg	5	n.d.	-
Heptabromodiphenyl ether		mg/kg	5	n.d.	-
Octabromodiphenyl ether		mg/kg	5	n.d.	-
Nonabromodiphenyl ether		mg/kg	5	n.d.	-
Decabromodiphenyl ether		mg/kg	5	n.d.	-
Sum of PBDEs		mg/kg	_	n.d.	1000



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Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	1
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β - HBCDD, γ - HBCDD) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6,	With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.	mg/kg	20	n.d.	-
134237-52-8))			ĺ	1	
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
PFOS and its salts (CAS No.: 1763-23-1 and its salts)	With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
PFOA and its salts (CAS No.: 335-67-1 and its salts)	With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Polychlorinated biphenyls (PCBs)	With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.	mg/kg	0.5	n.d.	Ī
Polychlorinated naphthalene (PCNs)	With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.	mg/kg	5	n.d.	-
Polychlorinated terphenyls (PCTs)	With reference to US EPA 3550C: 2007, analysis was performed by GC/MS.	mg/kg	0.5	n.d.	-
Short Chain Chlorinated Paraffins(C10-C13) (SCCP) (CAS No.: 85535-84-8)	With reference to ISO 18219-1: 2021, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Tributyl tin (TBT)	With reference to ISO 17353: 2004, analysis was performed by GC/FPD.	mg/kg	0.03	n.d.	-
Bis(tributyltin) oxide (TBTO) (CAS No.: 56-35-9)	Calculated from the result of Tributyl Tin (TBT).	mg/kg	0.03 ▲	n.d.	-
Triphenyl tin (TPT)	With reference to ISO 17353: 2004, analysis was performed by GC/FPD.	mg/kg	0.03	n.d.	-
Dibutyl tin (DBT)	With reference to ISO 17353: 2004, analysis was performed by GC/FPD.	mg/kg	0.03	n.d.	-
Dioctyl tin (DOT)	With reference to ISO 17353: 2004, analysis was performed by GC/FPD.	mg/kg	0.03	n.d.	-
Polyvinyl chloride (PVC)	With reference to ASTM E1252: 2021, analysis was performed by FT-IR and Flame Test.	**	-	Negative	-



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Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Butyl benzyl phthalate (BBP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	1000
85-68-7)	analysis was performed by GC/MS.				
Dibutyl phthalate (DBP) (CAS No.: 84-	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	1000
74-2)	analysis was performed by GC/MS.				
Di-(2-ethylhexyl) phthalate (DEHP)	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	1000
(CAS No.: 117-81-7)	analysis was performed by GC/MS.				
Diisobutyl phthalate (DIBP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	1000
84-69-5)	analysis was performed by GC/MS.				
Bis(2-methoxyethyl) phthalate (DMEP)	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
(CAS No.: 117-82-8)	analysis was performed by GC/MS.				
1,2-Benzenedicarboxylic acid, di-C6-8-	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
branched alkyl esters, C7-rich (DIHP)	analysis was performed by GC/MS.				
(CAS No.: 71888-89-6)					
1,2-Benzenedicarboxylic acid, di-C7-	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
11-branched and linear alkyl esters	analysis was performed by GC/MS.				
(DHNUP) (CAS No.: 68515-42-4)					
Diisodecyl phthalate (DIDP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
26761-40-0, 68515-49-1)	analysis was performed by GC/MS.				
Diisononyl phthalate (DINP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
28553-12-0, 68515-48-0)	analysis was performed by GC/MS.				
Di-n-octyl phthalate (DNOP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
117-84-0)	analysis was performed by GC/MS.				
Di-n-hexyl phthalate (DNHP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
84-75-3)	analysis was performed by GC/MS.				
Antimony (Sb) (CAS No.: 7440-36-0)	With reference to US EPA 3050B: 1996,	mg/kg	2	n.d.	-
	analysis was performed by ICP-OES.				
Beryllium (Be) (CAS No.: 7440-41-7)	With reference to US EPA 3050B: 1996,	mg/kg	2	n.d.	-
	analysis was performed by ICP-OES.				

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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Note:

- 1. mg/kg = ppm; 0.1wt% = 0.1% = 1000ppm
- 2. MDL = Method Detection Limit
- 3. n.d. = Not Detected (Less than MDL)
- 4. "-" = Not Regulated
- 5. **= Qualitative analysis (No Unit)
- 6. Negative = Undetectable; Positive = Detectable
- 7. PFOS and its salts including:

CAS No.: 1763-23-1, 2795-39-3, 29457-72-5, 29081-56-9, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0 and others.

8. PFOA and its salts including:

CAS No.: 335-67-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 3825-26-1 and others.

9. ▲ : The MDL was evaluated for element / tested substance.

Conversion Formula : $AX = A \times F$

AX	A	F	
Bis(tributyltin)oxide (TBTO)	Tributyl Tin (TBT)	1.0276	

Parameter Conversion Table: https://eecloud.sgs.com/Region_TW/DocDownload.aspx?name=Others

10. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.

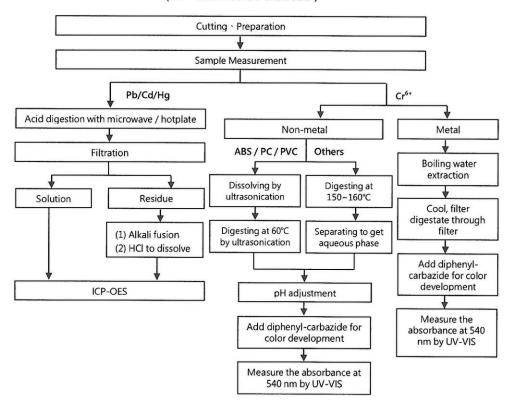


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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)



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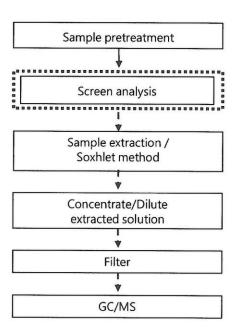
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Analytical flow chart - PBBs / PBDEs

First testing process

Optional screen process

Confirmation process

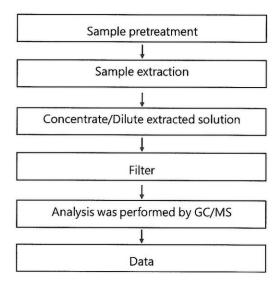




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Analytical flow chart - HBCDD



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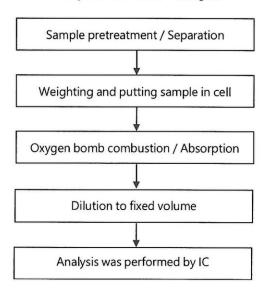
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Analytical flow chart - Halogen





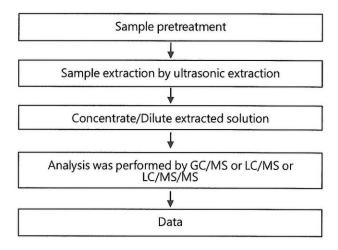
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Analytical flow chart - PFAS (including PFOA/PFOS/its related compound, etc.)





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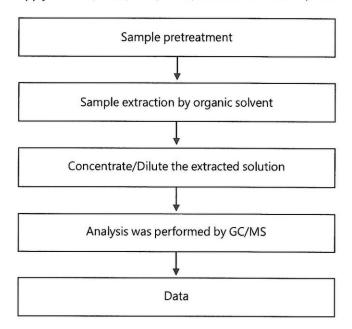
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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Analytical flow chart

* Apply to: PCBs, PCNs, PCTs, Mirex, Chlorinated Paraffins, DBBT





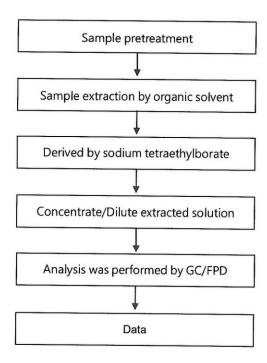
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Analytical flow chart - Organic-Tin





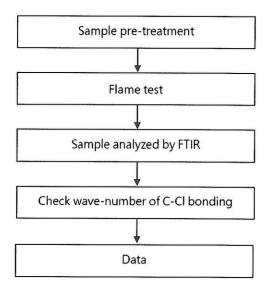
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Analysis flow chart - PVC



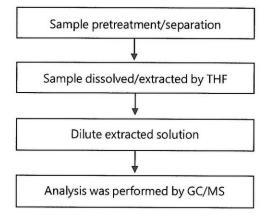


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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Analytical flow chart - Phthalate

[Test method: IEC 62321-8]



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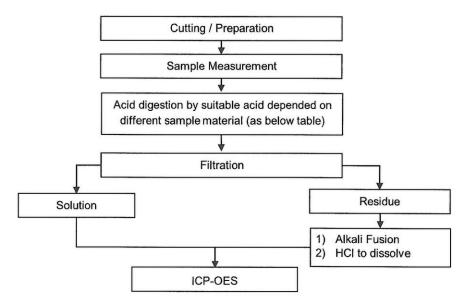


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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Flow Chart of digestion for the elements analysis performed by ICP-OES

These samples were dissolved totally by pre-conditioning method according to below flow chart.



Steel, copper, aluminum, solder	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
Glass	HNO₃/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCI
Others	Added appropriate reagent to total digestion

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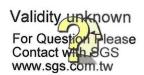
HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

* The tested sample / part is marked by an arrow if it's shown on the photo. *

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** End of Report **





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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

The following sample(s) was/were submitted and identified by the applicant as:

Sample Submitted By : HENKEL CORPORATION

Sample Name : ADHESIVE Style/Item No. : QMI519

Sample Receiving Date : 21-Dec-2022

Testing Period : 21-Dec-2022 to 27-Dec-2022

Test Requested : As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in

the submitted sample.

Test Results : Please refer to following pages.





PIN CODE: 946E5A68



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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Test Part Description

No.1 : SILVER COLORED PASTE

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Fluorine (F) (CAS No.: 14762-94-8)	With reference to BS EN 14582: 2016,	mg/kg	50	n.d.
	analysis was performed by IC.			
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016,	mg/kg	50	n.d.
	analysis was performed by IC.			
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016,	mg/kg	50	n.d.
	analysis was performed by IC.			
lodine (I) (CAS No.: 14362-44-8)	With reference to BS EN 14582: 2016,	mg/kg	50	n.d.
	analysis was performed by IC.	5, 3		

Note:

1. mg/kg = ppm; 0.1wt% = 0.1% = 1000ppm

2. MDL = Method Detection Limit

3. n.d. = Not Detected (Less than MDL)



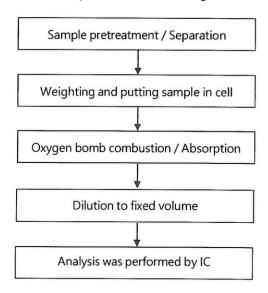
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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

Analytical flow chart - Halogen





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HENKEL CORPORATION 14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.

* The tested sample / part is marked by an arrow if it's shown on the photo. *

ETR22C04296



** End of Report **