

CONSULTANCY REPORT

BS 5609 – Section 3 **(Self-adhesive label performance – Print durability)**



Prepared for: Shanghai Chasewit Technology Co., Ltd

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Issued: 29th May 2020

Reference: 19-156201

This document is made subject to the conditions that it is confidential and may not be disclosed in whole, or in part, to others without the written consent of Smithers.

1 Introduction

Smithers was requested by Shanghai Chasewit Technology Co., Ltd to conduct testing on one printed self-adhesive label material to Section 3 of the Standard BS 5409:1986, "Printed Pressure-Sensitive, Adhesive Coated Labels for Marine Use".

Section 3 of the Standard covers the requirements for performance of printed pressure-sensitive adhesive-coated labels.

2 Samples received

Table 1 – Details of samples received

Smithers Reference	Product Description	Base Substrate	Ink Type	Printer Manufacturer/Model
H	CSH-19LBR	SYN	Inkjet	Epson GP831

3 Test methods and performance requirements

The samples were conditioned for a minimum of 24 hours at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ rh prior to testing.

3.1 Print key effectiveness (Standard reference 8.1)

Tested in accordance with appendices H and G.

Requirements

- Ink shall not be removed from more than 5% of the printed area of each colour.
- Any changes should be no less than grade 3 of the British Standard Grey Scale.
- Any legends or symbols should remain identifiable.

3.2 Abrasion resistance (Standard reference 8.2)

Tested in accordance with appendices J and G.

This test measures the abrasion resistance of the print after exposure to a sea water/sand abrasion cycle.

Requirements

- Colour should remain recognisable.
- Any change should be no less than grade 2 of the British Standard Grey Scale.
- Any legends or symbols should remain identifiable.

5.3 Permanence of print (Standard reference 8.3)

Tested in accordance with appendices E and G.

This test measures the resistance to change after exposure to salt spray/accelerated light cycles.

Requirements

- Colour should remain recognisable.
- Any fading or colour change should be no less than grade 2 of the British Standard Grey Scale.
- Any legends or symbols should remain identifiable.

4 Results

4.1 Table 2 – Print key effectiveness (Standard reference 8.1)

Smithers Reference	Printing Ink	Grey Scale Rating	Observations	Pass/Fail
I1	Black	3	Some print removal	Pass

4.2 Table 3 – Abrasion resistance (Standard reference 8.2)

Smithers Reference	Printing Ink	Grey Scale Rating	Observations	Pass/Fail
I1	Black	4	Slight print removal	Pass

4.3 Table 4 – Permanence of print (Standard reference 8.3)

Smithers Reference	Printing Ink	Grey Scale Rating	Observations	Pass/Fail
I1	Black	4	Slight print fade	Pass

5 Conclusion

The printed self-adhesive label supplied by Shanghai Chosewit Technology Co., Ltd has met all of the requirements of BS 5609 Section 3 for black ink only. A certificate is attached.

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Appendix

Photographs of the test results

Print key effectiveness

Figure 1 – Sample reference: 11



Abrasion resistance

Figure 2 – Sample reference: I1



Permanence of print

Figure 3 – Sample reference: I1





TEST CERTIFICATE

BS 5609 (Section Three)

Client: Shanghai Chasewit Technology Co., Ltd
Product reference: CSP-19LBR
Base substrate: SYN
Printer make and model: Epson GP831
Ink colour(s): Black
Smithers Ref: 19-156201

Tests passed	Standard reference
Print key effectiveness	8.1
Abrasion resistance	8.2
Permanence of print	9.3

This is to certify that the above label material has been tested for **black ink only** by Smithers and conforms to BS 5609:1996 Section 3 – Printed pressure-sensitive, adhesive coated labels.

Signed: 
David Tempest

Dated: 29th May 2020