

MARKING AND LABELING SYSTEMS

Marine use marking and labeling testing for hazardous chemicals

UL Solutions helps assess the safety concerns of the label industry with respect to labeling of hazardous goods for marine transport.

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Overview

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and International Maritime Dangerous Goods (IMDG) Code are internationally accepted requirements that address the safety of the transportation or shipment of dangerous goods or hazardous materials by water on vessel. Under these requirements, containers holding dangerous goods shall be identifiable and withstand immersion in the sea for three months. British Standard (BS) 5609:2024, Specification for Printed Pressure-Sensitive, Adhesive-Coated Labels for Marine Use, Including Requirements for Label Base Material, is the de facto standard used by the labeling industry to show compliance to the IMDG code requirements.

UL Solutions' marine use marking and labeling testing services specifically cover labels and label materials that are intended to durably mark dangerous and hazardous goods (such as drums, intermediate bulk containers and tanks) for marine transport in international waters. This helps ensure that chemical containers that are lost at sea and recovered are identifiable through the markings.

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Test program

UL Solutions utilizes the BS 5609:2024 specification for printed pressure-sensitive, adhesive-coated labels for marine use. The label performance requirements are primarily covered under Sections 2 and 3. Section 2 relates to the face stock material and adhesive, and Section 3 relates to the durability of the printing of the label. Annex K can also be used; it covers provisions for testing additional substrates (application services) under an abbreviated program.

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Section 2 — Base material

Covers requirements for a three-month marine performance test and laboratory performance tests on both aluminum and high-density polyethylene (HDPE) test plates that include dimensional stability, adhesion after various exposures and color fastness.

Section 3 — Printing of the label Covers requirements for laboratory performance tests of print effectiveness, abrasion resistance and permanence of print.

Annex K — Specific substrate Recommended user laboratory tests for the evaluation of label adhesion for surfaces not covered by Section 2 i.e., other than aluminum and HDPE.



Services

UL Solutions offers testing services converters/printers to demonstrate compliance with the requirements of Section 2, Section 3 and/or Annex K. We offer a comprehensive datasheet that includes detailed test results and photos. Please note that these services are for testing only and do not include certification. However, we do issue a UL Type Examination Certificate, which can be easily shared to demonstrate compliance with the relevant standards.

UL Solutions' testing services create value for label suppliers by providing them with an independent and objective means to demonstrate to the supply chain that their labels meet the applicable requirements. This enables specifiers and buyers quick and easy access to a list of label suppliers that provide compliant marine use labels through the <u>UL Type Examination Certificate database</u>.

Q: Where can I learn more about the test program?

A: The complete test service is detailed in BS 5609:2024 specification for printed pressuresensitive, adhesive-coated labels for marine use.

Q: What products are covered by this marine use marking and labeling program?

A: Label materials, printed labels and labels intended to receive additional printing by end users are covered.

Q: Who has responsibility for compliance with these requirements?

A: Per BS 5609:2024, footnotes 2 and 3, it is the responsibility of the label material and label supplier to show compliance with Sections 2 and 3 of this standard.

Q: Who should be testing for compliance to the standard?

A: Per BS 5609:2024, commentary on Sections 2 and 3. it is advised to consider the use of a thirdparty to demonstrate conformity to the standard.

Q: What type of dangerous goods and hazardous materials are covered by these regulations?

A: Some examples include explosives, gases, flammable liquids and solids, oxidizers and organic peroxides, toxic and infectious substances, radioactive materials, and corrosive substances.

Please reference the IMDG Code for a complete list.

Q: What type of containers are covered by these regulations?

A: Per BS 5609:2024, each container or package containing dangerous goods shall be marked with compliant labels. In cases where the outer covering is not durable enough for immersion at sea (e.g., corrugated boxes), the inner containers must be marked with compliant labels. IMDG Code identifies the following types of containers that may be used to transport dangerous goods: drums, jerricans, boxes, composite packaging, intermediate bulk containers (IBCs), portable tanks, multiple-element gas containers (MEGCs), road tank vehicles and more.

Q: What is the submission process? A: The submittal process can be

1. Submit an order to UL Solutions for marine use evaluation to EM.NASales@ul.com or contact your local sales representative.

2. Provide UL Solutions with label material and printing information along with samples for testing.

3. After successful completion of the test, UL Solutions will issue a completed datasheet and a certificate.



completed in three simple steps.

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Q: What are the deliverables of the testing service?

A: 1. Datasheet

- 2. UL Type Examination Certificate
- 3. Publication on the UL Examination Certificate Database

Q: Can I test and certify different substrates?

A: BS 5609:2024 Section 2 calls out for testing on aluminum and HDPE plates, but there are provisions under Annex K to evaluate alternate substrates (e.g., polypropylene, painted surfaces) under an abbreviated test program

Q: Does UL Solutions have testing capability for BS 5609?

A: UL Solutions has testing capability for full testing according to the latest edition of the standard. This includes testing according to Section 2, i.e., the three-month marine water immersion, Section 3, and using different application surfaces.





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