



Refreshener and Perfume Resistance of Interior Parts

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. Test of the resistance of affected vehicles interior materials and parts to medias for refreshing or perfuming the vehicle interior air. This specification describes the test procedures used for the evaluation of the resistance of plastic materials and decorative parts regarding the scent media. For clarification refer to responsible material engineer if materials or parts shall be tested according this standard.

1.2 Applicability. Vehicle interior parts getting in direct or indirect contact to the refreshener/perfume media, e.g. perfume dispenser, neighbor parts to perfume dispenser, especially if those parts are painted or metal plated. In general all parts in a distance up to 150 mm to the respective scent device shall be tested.

The tests described in this specification can also be used to test interior materials from customer complains to check the plausibility of a failure mode.

1.3 Remarks. Media stated in this specification are defined as liquids and other materials containing perfumes or refresheners, e.g. polymers, elastomers or cardboards impregnated with this kind of media.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW14698

2.3 Additional References.

CAS 9004-82-4

3 Resources

3.1 Facilities.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Heating oven.

3.2.2 Closeable Vessel, e.g. a desiccator with a volume of 1 l.

3.2.3 Small vials (5 to 10) ml volume.

3.2.4 Caliper.

3.2.5 Auxiliary materials (pipette, water, lint-free cloth.

3.2.6 Soap detergent solution (e.g Sodium laureth sulfate (CAS 9004-82-4) or equivalent, with neutral pH value and to contain no optical brighteners.

3.3 Test Vehicle/Test Piece. Interior materials that may come into direct/indirect contact with the respective media.

If possible, complete components shall be tested. Where size, configuration etc. restricts testing, sections of convenient size, cut from the component shall be used. A minimum of three test pieces shall be tested.

3.4 Test Time.

Calendar time: 30 days

Test hours: 720 h

Coordination hours: 2 h

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Not applicable.

4 Procedure

4.1 Preparation. The surfaces to be tested shall be cleaned accordingly before the respective tests.

Depending on the material different evaluations shall be performed before and after the test. See the respective interior material requirement according to 5.2 for required test information.

4.2 Conditions.

4.2.1 Environmental Conditions. As specified in 4.3.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.2.2.1 Organic Coatings. All organic coatings conditioned for ≥ 72 h.

4.2.2.2 Self Adhesive Films. Condition for ≥ 24 h after adhering.

4.2.2.3 Plastic Parts. Condition for ≥ 24 h. Conditioning and testing shall not be performed within 72 h of manufacture.

4.3 Instructions.

Note 1: If possible, use parts/material samples without cut edges. Parts/materials to be cut shall be recorded explicitly in the test report.

Note 2: Tests shall be performed at $(+23 \pm 5) ^\circ\text{C}$, and elevated temperature $(+70 \pm 3) ^\circ\text{C}$. Two vessels shall be prepared for each test.

4.3.1.1 For materials getting in **direct contact** with the respective media:

Drop $\approx 50 \mu\text{l}$ of the test solution to the clean surface of the test sample in at least three different places using a pipette. Put the test sample into a closeable vessel and put this vessel into an oven at $(+70 \pm 3) ^\circ\text{C}$ or store at $(+23 \pm 5) ^\circ\text{C}$.

If the scent media is a solid, put a small piece of the solid in direct contact to the part/material.

4.3.1.2 For materials getting in **indirect contact** with the respective media:

Put $50 \mu\text{L}$ of the respective media in a small glass besides the part into the vessel and put the closed vessel into the oven $(+70 \pm 3) ^\circ\text{C}$ or store at $(+23 \pm 5) ^\circ\text{C}$.

If the scent media is a solid, put a small piece of the solid into the vessel and ensure that part/material will not get in direct contact with it.

4.3.2 The vessel shall be placed in the oven for 720 h at $(+70 \pm 3) ^\circ\text{C}$ or stored at $(+23 \pm 5) ^\circ\text{C}$ for 720 h.

4.3.3 The test sample shall be cleaned with a detergent solution (see 3.2.6) immediately after removing from the test vessel and wiped dry.

4.3.4 After cooling to $(+23 \pm 5) ^\circ\text{C}$, the evaluation shall be performed (for detailed information see 5.2).