GM WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW3259

Mildew Resistance

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. This standard shall be used to determine the resistance to mildew growth and the associated odor characteristics of an automotive material when subjected to heat and humidity.

1.2 Applicability. This procedure is applicable for use on interior automotive materials such as carpets, upholstery, insulation, etc.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

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. Air circulating oven capable of maintaining the required temperature to within ± 2 °C and suitable cutting tools for preparation of test specimens.

3.3 Test Vehicle/Test Piece. The test vessel shall not contain components that either emit or absorb dampness or odors. For this reason, only containers and covers made of glass are permissible. The lid shall be sealed by means of a plain ground joint. Sealing grease or sealing rings shall not be used. Any necessary support shelves or racks within the container shall be made of glass or glazed ceramics. The use of suitable sized desiccators is recommended. The lid must form a vapor seal with the container. The test container including the lid and the insert shall be cleaned carefully prior to each test ensuring that there is no odor or moisture.

3.3.1 Test Material. Distilled or deionized water.

3.4 Test Time.

Calendar time:	15 days
Test time:	14 days
Coordination hours:	1 hour

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Personnel trained in accordance with the laboratory accreditation and Standard Operating Procedure requirements.

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4 Procedure

The test specimen is placed in a container, sealed, and exposed to heat and humidity. After the specified time, the container is opened and the test specimen is evaluated for the presence of mildew and any associated odor.

4.1 Preparation.

4.1.1 Conditioning. Test specimens are to be produced immediately upon receipt of parts or materials and tested shortly afterwards.

4.1.2 The size of the test specimens shall be approximately 25 cm^2. If the test specimens are smaller than the required dimension, the entire specimen shall be tested.

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable.

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.

4.3 Instructions.

4.3.1 The test container shall be filled with an adequate amount of distilled or deionized water. Enough water shall be placed in the test container to ensure that some water remains at the end of the test.

4.3.2 The test specimen shall be positioned in the test container on the support shelf or rack to prevent the possibility of direct contact between the water and the test specimen.

4.3.3 The test container shall be tightly sealed and stored at 40 °C ± 2 °C for 14 days.

4.3.4 Following the specified period, the sealed test container with the test specimen shall be allowed to cool down to +23 °C ± 3 °C.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results.

5.2.1 After cooling, the test container shall be opened by sliding the cover (the cover shall not be lifted) to provide the gap necessary for evaluation of the presence of mildew odor.

5.2.2 After the odor test is completed, the appearance of the test specimen is evaluated (naked eye) for the visible presence of mildew. If mildew is already visible before the odor test, no odor test shall be conducted.

5.3 Test Documentation.

5.3.1 Expression of Results. Report one of the following:

- No Mildew = No typical mildew odor and/or no mildew growth
- Mildew = Presence of typical mildew odor and/or mildew growth

6 Safety

This Engineering Standard may involve safety requirements for hazardous materials, the method of operations and equipment. This standard does not propose to address all the safety issues associated with its use. It is the responsibility of the user of this standard to ensure compliance with all appropriate safety and health practices. This would include any specific training that may be required. The safety and health standards include site specific rules and procedures, company rules and procedures, and Government Standards. Contact shall be made with the appropriate site Safety and Health personnel for further direction and guidance in these matters.

7 Notes

7.1 Glossary.

Mildew: Mildew is used to define a white, grey, blue/green, downy/fluffy, dusty coating, or associated odor created by fungus on damp, organic materials.

7.2 Acronyms, Abbreviations, and Symbols.

GSSLT Global Subsystem Leadership Team

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