



Requirements for Material Compatibility with Transmission Fluid

1 Scope

1.1 Material Description. This standard describes compatibility testing requirements for any coating, rust preventive, process aid, assembly aid, grease, lubricant or other contaminant that will come in contact with transmission fluid.

1.2 Symbols. Not applicable.

1.3 Applicability. Products or chemicals that have potential to contaminate transmission fluid shall complete this testing. The supplier and/or user of the product are responsible to prove compliance to this standard.

2 References

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

2.1 External Standards/Specifications.

ASTM D445	ASTM D2783	ASTM D4172	ASTM D6082
ASTM D892	ASTM D2983	ASTM D5185	JASO M358
ASTM D2270			

2.2 GM Standards/Specifications.

GMW3059	GMW14270	GMW16444	GMW17238 (ID)
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(ID) = This standard is limited to internal distribution within General Motors and shall not be distributed outside this company. Contact the GM Lead Engineer for further instructions.

2.3 Additional References.

Safety and Industrial Hygiene (S&IH) Technical Standard (TS), S&IH TS 3.4-160-02 (available at www.gmsupplypower.covisint.com).

2.4 Additional Information. Additional information about testing, including all forms are available from the GM Automatic Transmission Fluid (ATF) and Gear Oil Committee Chairman (available in GM Supply Power, "Dexron®").

3 Requirements

3.1 All materials supplied to this standard must comply with GMW3059, **Restricted and Reportable Substances**, including the requirement to submit a full material composition disclosure to GM via the International Material Data System (IMDS) or via a completed GMW3059 report form.

3.1.1 Test Preparation and Evaluation.

3.1.1.1 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.

3.1.3 Facilities. All testing must be completed at an independent test facility or a laboratory previously approved by GM Global Propulsion Systems Materials Engineering.

3.1.4 Equipment. Not applicable.

3.1.5 Test Vehicle/Test Piece. The test material is the coating, rust preventive, process aid, assembly aid, grease, lubricant or other contaminant that will come in contact with transmission fluid.

3.1.6 Test Time. Reference the lab test procedure(s) in Section 3 for timing details.

3.1.7 Test Required Information. Appendix A, Data Sheet A1 must be completed and submitted to the testing laboratory before any testing can begin. Based on the information provided in Appendix A, Data Sheet A1. GM Global Propulsion Systems Materials Engineering will determine the concentration of product in transmission fluid to be tested.

3.1.8 Personnel/Skills. Test technician capable to perform test to requirements.

3.2 Preparation. Not applicable.

3.3 Conditions.

3.3.1 Environmental Conditions. Not applicable.

3.3.2 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.

3.4 Instructions. Not applicable.

3.5 Data. Not applicable.

3.6 Safety. This standard may involve hazardous materials, operations, and equipment. This standard does not propose to address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

3.7 Documentation. Samples of components or material released to this standard shall be tested for conformity with the requirements of this standard and approved by the responsible GM Department prior to the start of delivery of production level components or materials.

Any change to the component or material, e.g., design, function, properties, manufacturing process and/or location of manufacture requires a new release of the product. It is the sole responsibility of the supplier to provide the customer, unsolicited, with documentation of any change or modification to the product/process, and to apply for a new release.

If not otherwise agreed to, the entire verification test shall be repeated and documented by the supplier prior to start of delivery of the modified or changed product. In some cases, a shorter test can be agreed to between the responsible GM department and the supplier.

3.7.1 Test Results.

3.7.1.1 Interpretation of Results. GM Global Propulsion Systems Materials Engineering will review the test results and reserves the right to determine whether a product meets this standard. Additional testing may be required based on the type of product or the test results. A test report format is available from GM Global Propulsion Systems Materials Engineering.

3.7.2 Test Documentation. Standard report format for each test and test condition listed in Appendix B, Table B1 shall be provided by the test lab to the GM ATF and Gear Oil Committee for review and approval.

3.8 Testing Requirements. Appendix B, Table B1 defines the testing requirements. Any product that does not meet all the requirements defined herein is considered not compatible with transmission fluid.

4 Manufacturing Process

Not applicable.

5 Rules and Regulations

5.1 Legal Regulations. All materials must satisfy applicable laws, rules, regulations and recommendations valid in the country of usage.

5.2 Language. In the event of conflict between the English and domestic language, the English language shall take precedence.

5.3 Inspection and Rejection. All shipments of material or parts under contract or purchase order manufactured to this specification shall be equivalent in every respect to the initial samples approved by Engineering. There shall be no changes in either formulation or manufacturing processes permitted without prior notification and approval by Engineering. Lack of notification by the supplier constitutes grounds for rejection of any shipment. While samples may be taken from incoming shipments and checked for conformance to this specification, the

supplier shall accept the responsibility for incoming shipments meeting this specification without dependence upon purchaser's inspection.

The series of tests used to approve each batch of product along with acceptance limits will be agreed upon by the purchaser and seller. The laboratory providing the certificate of analysis must also participate in a proficiency testing program (round robin) that is approved by the Fuels, Fluids, and Lubricants Global Subsystem Leadership Team (GSSLT) or designate. The Fuels, Fluids, and Lubricants GSSLT or designate must receive copies of the proficiency testing reports directly from the test program administrator.

5.4 Initial Source Approval. No shipment shall be made by any supplier until representative initial production samples have been approved by the Fuels, Fluids, and Lubricants Global Subsystem Leadership Team or designees meeting the requirements of this specification.

5.5 Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS). For new product submissions, or when a change in chemical composition of an existing product has occurred, a complete copy of the Material Safety Data Sheet/Safety Data Sheet must be submitted in compliance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) requirements or other country-specific MSDS/SDS requirements. In addition, product MSDS/SDS submissions must be in compliance with specific country General Motors S&IH TS 3.4-160-02 where available.

6 Approved Sources

Materials supplied to this specification must be approved by General Motors.

The appropriate GM Materials Engineering department(s) must confirm material as meeting the requirements of this specification. Any test data sheets of material submitted to General Motors for such confirmation (e.g., during Production Part Approval Process (PPAP)) under this material specification must list all properties and must apply corresponding test methods of this material specification.

Engineering qualifications of an approved source are required for this standard. Only sources listed in the GM Materials File (i.e., GM SupplyPower) under this standard number have been qualified by engineering as meeting the requirements of this standard. To access this list, reference GMW14270 for latest location.

For other GM locations, the responsible engineering group should be contacted to obtain the approved source in that individual country.

7 Notes

7.1 Glossary. Not applicable.

7.2 Acronyms, Abbreviations, and Symbols.

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ASTM	ASTM International
ATF	Automatic Transmission Fluid
cP	Centipoise
cST	Centistokes
EP	Extreme Pressure
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
GM	General Motors
GSSLT	Global Subsystem Leadership Team
HPCVT	High Performance Continuously Variable Transmission Fluid
IMDS	International Material Data System
LFW	Low Friction Wear
LVFA	Low Velocity Friction Apparatus
mL	Milliliter
mm	Millimeter
MSDS	Material Safety Data Sheet