



# DEXRON®

## Test File Upload Manual

This manual specifies the test result upload procedures for automatic transmission and elastomer test methods required of automatic transmission fluids (ATF) intended to meet General Motors DEXRON performance specifications.

This manual is available only in electronic form at the GM Test Data Center website, <https://GMTDC.org>. This manual will be updated as necessary. All notification of changes will be via e-mail. To have your name included on the distribution list, please send your request along with your e-mail address to the address shown below.

Any questions or comments can be directed to:

GM Test Data Center  
Email : [info@GMTDC.org](mailto:info@GMTDC.org)

**September 18, 2024**

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## Section I

OVERVIEW

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- I.a This manual details the procedures and requirements necessary to report tests intended for use in establishing DEXRON performance claims for automatic transmission fluids.
- i. This manual covers only the test reporting process.
  - ii. GM DEXRON Fluid Committee administers the DEXRON licensing program. For information on how to pursue a DEXRON license contact:

Email: [aleise.jimenez@gm.com](mailto:aleise.jimenez@gm.com)

- I.b The GM Test Data Center (GMTDC) website is used to collect test data (see Tables I & II), whether generated using GM or industry test methods, run in support of DEXRON licensing requirements.
- i. DEXRON specifications require a formulation coding system for automatic transmission fluid tests. The format of this coding system, identified in the test report packet as the mnemonic FORM, is below. This information is needed prior to file upload and is populated in the data transmission file by the laboratory.

FORM = SID-SPONSORCODE-MODIFICATION-BLEND-METHOD-COUNT-LAB-INST

Where:

SID – Three-character ID assigned by the GMTDC Manager. Where possible, these IDs match codes already assigned by the ACC Monitoring Agency and/or the ATC European Registration Centre. Contact the GMTDC Manager if needed.

SPONSORCODE – An up-to-ten character alphanumeric value assigned by the Test Sponsor to facilitate tracking and auditing the test fluid sample. Dashes, slashes and special characters, etc. are not permitted.

MODIFICATION - Up to a two-character value (A, B, C...ZZ) indicating a formulation modification. Note, that all DEXRON tests must be run on the final formulation.

BLEND – Two-digit value indicating the number of times the unique formulation identified by SPONSORCODE has been blended. If BLEND < 10, **do not** begin with a leading zero, ie. 1, 2...10. A value of 1 indicates the first blend batch.

METHOD – An up-to-eight character value indicating the test type of the data, and any specific conditions for the test run. See Table I for allowable method values.

COUNT – Two-digit value indicating the number of time the unique formulation identified by SPONSORCODE has been tested. If COUNT < 10, **do not** begin with a leading zero, ie. 1, 2...10. A value of 1 indicates the first time tested.

## Section I

OVERVIEW (continued)

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LAB – Two-character ID assigned to laboratory by the GMTDC Manager. Where possible, these IDs match codes already assigned by the Test Monitoring Center. Contact the GMTDC manager if needed.

INST - An up-to-five alphanumeric code which identifies the test stand or apparatus in which the candidate was tested.

- ii. DEXRON test data transmissions for active test types, shown in Table I, are electronically submitted using a test-specific data dictionary and a header data dictionary, which is submitted with all data transmissions. The test type of the data is reported in the header data dictionary. Allowable values for test type are shown in Table I.
- iii. DEXRON test data transmissions for inactive test types, shown in Table II, are electronically submitted as a PDF file of the test report only. These tests are uploaded as part of an individual formulation submission on the DEXRON eSubmission website and are not uploaded to the GMTDC website. Inactive test types are shown in Table II.

Table I – Active DEXRON Test Type & Method Designations

Test Description	Test Method	Test Type	Method	Test Details
Aeration Test	DEXRON HP-ATF, Appendix K	AER	AERNEW	New Fluid only
Aeration Test	DEXRON HP-ATF, Appendix K	AER	AERACYC	Both New Fluid & After Cycling Test – Filtered fluid
Aluminum Beaker Oxidation Test	DEXRON HP-ATF, Appendix D	ABOT	ABOT	
Anti-Shudder Durability Test	GMW18620	ASD	ASD	
Axial Groove-Ball-Bearing (ARKL)	VW-PV-1454	ARKL	ARKL	
Bearing Test	DIN 51819 T3	DIN51819	DIN51819	
Friction Material Durability <sup>A,B</sup>	MERCON Specification 3.14 Modified	FMD	FMD	
GM Cycling 6 Speed	GMW18307	CYC6	CYC6	
DKA Oxidation Stability	CEC L-48 Modified Method B	DKA	DKA	
Elastohydrodynamic Film Thickness	EHDPROC_11	EHDFILM	EHDFILM	Run at Imperial College
Elastomer Compatibility	GMW18428	ELAST	ACM1A	ACM1 Elastomer, 168 h immersion time at 150°C
Elastomer Compatibility	GMW18428	ELAST	ACM2A	ACM2 Elastomer, 168 h immersion time at 150°C
Elastomer Compatibility	GMW18428	ELAST	ACM2C	ACM2 Elastomer, 1008 h immersion time at 150°C
Elastomer Compatibility	GMW18428	ELAST	AEM2A	AEM2 Elastomer, 168 h immersion time at 150°C
Elastomer Compatibility	GMW18428	ELAST	AEM2C	AEM2 Elastomer, 1008 h immersion time at 150°C
Elastomer Compatibility	GMW18428	ELAST	FKM2A	FKM2 Elastomer, 168 h immersion time at 150°C
Elastomer Compatibility	GMW18428	ELAST	FKM2C	FKM2 Elastomer, 1008 h immersion time at 150°C
Elastomer Compatibility	GMW18428	ELAST	FKM3A	FKM3 Elastomer, 168 h immersion time at 150°C
Elastomer Compatibility	GMW18428	ELAST	NBR1D	NBR1 Elastomer, 168 h immersion time at 125°C
Elastomer Compatibility	GMW18428	ELAST	HNBR1A	HNBR1 Elastomer, 168 h immersion time at 150°C
Electrical Resistivity	ASTM D1169	RESD1169	RESD1169	
Electrical Conductivity	ASTM D2624-06 Modified	ECD2624	ECD2624	
Foaming Characteristics	ASTM D892 Modified	FOAM	FOAMNEW	New fluid
Foaming Characteristics	ASTM D892 Modified	FOAM	FOAMACYC	After Cycling Test – Filtered fluid
Foaming Characteristics	ASTM D892 Modified	FOAM	FOAMA130	After Thermal Aging at 130°C for 100 h
Foaming Characteristics	ASTM D892 Modified	FOAM	FOAMA135	After Thermal Aging at 135°C for 100 h
Foaming Characteristics	ASTM D892 Modified	FOAM	FOAMA150	After Thermal Aging at 150°C for 100 h
Foaming Characteristics	ASTM D892 Modified	FOAM	FOAMATRB	After Tapered Roller Bearing Test
FZG Pitting	FVA NO. 2/IV: PT-C/9/90	FZGP	FZGP	
FZG Scuffing	CEC L-084-02	FZGS	FZGS	
GM 3-Day Wear Test	GMW18619	GM3DW	GM3DWNEW	New Fluid
GM 3-Day Wear Test	GMW18619	GM3DW	GM3DWH2O	New fluid w/1000 ppm water added, per GM procedure
Low Speed Friction	DEXRON VI & HP, Appendix J	LSF	LSFNEW	New Fluid only
Low Speed Friction	DEXRON VI & HP, Appendix J	LSF	LSFACYC	New Fluid & After Cycling Test Fluid
Low Velocity Friction Apparatus (LVFA) <sup>A</sup>	JASO M-349	LVFA	LVFANEW	New fluid
Low Velocity Friction Apparatus (LVFA) <sup>A</sup>	JASO M-349	LVFA	LVFAABOT	After Aluminum Beaker Oxidation Test
Low Velocity Friction Apparatus (LVFA) <sup>A</sup>	JASO M-349	LVFA	LVFAREF	Reference Fluid
GM Plate Friction Test	DEXRON VI, Appendix C	PLATEF	PLATEF	
Pump Wear	ASTM D7043	PUMPWEAR	PUMPWEAR	

<sup>A</sup> Standardized Report Forms & Data Dictionary currently pending completion.

<sup>B</sup> Test currently under revision by General Motors.

Table I – Active DEXRON Test Type & Method Designations (cont.)

Test Description	Test Method	Test Type	Method	Test Details
SAE No. 2 Friction Test Machine $\mu$ PVT Test	SAE J2490	MPVT	MPVT	
Thermal Conductivity	ASTM D7896	THD7896	THD7896	
Tapered Roller Bearing Shear (KRL)	CEC L-45-99	TRBS	TRBS40	40 hour test time
Tapered Roller Bearing Shear (KRL)	CEC L-45-99	TRBS	TRBS100	100 hour test time
Basic Bench Testing (CP, HTHS, ICP, etc.) <sup>C</sup>	Various <sup>C</sup>	BENCH	BENCH	

<sup>A</sup> Standardized Report Forms & Data Dictionary currently pending completion.

<sup>B</sup> Test currently under revision by General Motors.

<sup>C</sup> See the Standardized Report Forms for a complete list of the tests required.

Table II – Inactive DEXRON Test Type & Method Designations

Test Description	Test Method	Test Type	Method	Test Details
Band Friction Test	DEXRON VI, Appendix D	BANDF	BANDF	
GM Cycling 4 Speed	DEXRON VI & HP, Appendix F	CYC4	CYC4	
Vehicle Performance Test	DEXRON VI, Appendix G	VEHICLE	VEHICLE	
Electronically Controlled Capacity Clutch (ECCC) Vehicle Performance Test	DEXRON VI, Appendix H	ECCC	ECCC	
Low Speed Carbon Fiber Friction Test	DEXRON VI & HP, Appendix J	LSCFF	LSCFF	Report using Low Speed Friction (LSF) in Table I
Hunting Behavior	LR4 4.8L 4L60-E	HUNTING	HUNTING	
Carbon Fiber Durability	MERCON Specification 3.14 Modified: Low Speed Carbon Fiber plates	CFD	CFD	
Fleet Test <sup>A</sup>	DEXRON VI & HP, Section 3.5.4	FLEET	FLEET	
Elastomer Compatibility	ASTM D471, DEXRON VI Appendix B	ELAST	FKM2B	FKM2 Elastomer, 504 h immersion time at 150°C
Elastomer Compatibility	ASTM D471, DEXRON VI Appendix B	ELAST	FKM3B	FKM3 Elastomer, 504 h immersion time at 150°C
Elastomer Compatibility	ASTM D471, DEXRON VI Appendix B	ELAST	FKM5B	FKM5 Elastomer, 504 h immersion time at 150°C
Elastomer Compatibility	ASTM D471, DEXRON VI Appendix B	ELAST	AEM2B	AEM2 Elastomer, 504 h immersion time at 150°C
Elastomer Compatibility	ASTM D471, DEXRON VI Appendix B	ELAST	AEM3B	AEM3 Elastomer, 504 h immersion time at 150°C
Elastomer Compatibility	ASTM D471, DEXRON VI Appendix B	ELAST	ACM1B	ACM1 Elastomer, 504 h immersion time at 150°C
Elastomer Compatibility	ASTM D471, DEXRON VI Appendix B	ELAST	ACM2B	ACM2 Elastomer, 504 h immersion time at 150°C
Elastomer Compatibility	ASTM D471, DEXRON VI Appendix B	ELAST	HNBRB	HNBR Elastomer, 504 h immersion time at 150°C

<sup>A</sup> All Fleet Testing programs require prior approval of the GM DEXRON Fluid Committee. Reporting requirements for these programs are set by the GM DEXRON Fluid Committee.

## Section II

TEST SPONSOR REQUIREMENTS

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- II.a Test Sponsors wishing to commission ATF testing for DEXRON shall apply to the GMTDC for a Test Sponsor Identity Code (SID).
- i. Where possible, the GMTDC will assign a Test Sponsor Identity Code (SID) already in use by that sponsor for other GMTDC activity.
  - ii. The assigned SID is to be supplied to the laboratory conducting the test.
  - iii. The fluid being tested must be identified by a unique SPONSORCODE that can be used to facilitate tracking and auditing the test fluid sample. A unique SPONSORCODE is assigned for each sample used for testing and is to be supplied to the laboratory for reporting to the GMTDC.
  - iv. The fluid being tested must also include a MODIFICATION value as part of the formulation identification. This MODIFICATION is to be supplied to the laboratory for reporting to the GMTDC.
  - v. The fluid being tested must be identified by a BLEND representing the blend batch. This BLEND is to be supplied to the laboratory for reporting to the GMTDC.
  - vi. The fluid being tested must be identified by a unique COUNT representing the number of times the fluid was tested for the given test type. This COUNT is to be supplied to the laboratory for reporting to the GMTDC.

- III.a Test Laboratories wishing to conduct ATF testing for DEXRON shall apply to the GMTDC for a Test Laboratory Identity Code (LAB).
- i. Where possible, the GMTDC will assign a Laboratory ID already in use by that lab.
- III.b Each test apparatus (stand, bath, etc.) used for testing must have a unique identity. The stand identity code shall be included in the test file that is uploaded, the data package and other documentation relating to a test and its result.
- III.c For test areas that require a reference to be completed before or in parallel with a candidate fluid, the reference fluid test shall successfully meet reference oil criteria.
- III.d If blended samples are tested the wt. % of each fluid and the fluid used for blending is to be indicated on the report form.
- III.e Each Test Laboratory, in order to be in compliance with GM guidelines, will conduct all testing according to the requirements of both the GM DEXRON Specifications and the applicable test method in effect at the time.
- III.f Test Laboratories shall be certified as complying with a quality system.
- i. Test Laboratories shall be ISO 17025 certified for the appropriate tests. New tests will be added to the laboratory scope on the first audit following release of the standards. Such accreditation must have been granted by an organization which has demonstrated that it operates in accordance with the requirements of ISO/IEC 17011:2004.
- ii. When requested by General Motors, the GMTDC, or a client company, a Test Laboratory shall supply evidence of compliance to all appropriate ISO accreditation(s).
- iii. The audit process for Test Laboratories will be part of their ISO 17025 certification.



IV.a Only those DEXRON tests listed in [Table I](#) of this manual may be uploaded to GMTDC.

IV.b Fees

- i. Test Review Fee - A test review fee becomes effective on initial upload.
- ii. Only one test review fee is due for an uploaded test. Correction uploads are not billed any additional test review fees.
- iii. Test Review Fees are billed directly to the Test Sponsor.
- iv. More information on fees is available from the [GMTDC website](#).

- V.a The Test Laboratory shall submit test data, in the GMTDC-approved format according to the relevant data dictionary, for all DEXRON tests described in Section I.b.
- i. Test Laboratories must submit the test results to GMTDC via fileupload on the [GMTDC website](#). Procedures for transmitting data electronically are available from the GMTDC.
    - a. The date completed must be reported for all tests.
  - ii. As part of the test data, the Test Laboratory shall make an appropriate validity declaration regarding the test result. This statement is included in the test data dictionaries.
  - iii. Test Laboratories have 30 days from test completion to submit the test data to the GMTDC. Results uploaded later than 30 days after completion require prior approval by the GMTDC DEXRON Manager.
  - iv. All test data for potential submission to GM for DEXRON licensing should be uploaded to the GMTDC.
- V.b Test Laboratories may find it necessary to change reported test results, either as a result of their own internal quality checks or as a result of discrepancies found by GMTDC during data validation. Test data may be corrected by uploading the full test data file, with the corrected data, to the GMTDC website.