



The First in Synthetics®

Torque-Drive™ Synthetic Automatic Transmission Fluid

The AMSOIL Alternative for Allison® Transmission Owners



Dear Allison® Transmission Owner,

Although you are probably not aware of it, you are being held hostage. You are being forced to purchase a transmission fluid that is costing more money than you should be spending. You do, however, have options.

Allison® transmission has established the Technical Engineering Specification 295 (TES 295) for automatic transmission fluids. When TES 295 products are used in Allison® transmissions and according to Allison® recommendations as outlined in Allison® Service Information Letter #1099E, the service life of these oils can be extended several times that of mineral oils. This extended drain recommendation saves money for Allison® transmission owners.

The only oils on the market, however, that are formally identified by Allison as TES-295 products are TranSynd or re-branded TranSynd products. Other companies seeking TES-295 approval are faced with a formidable obstacle. Allison does not have its stationary test stand available for companies seeking approval but recommends that testing be performed by an independent laboratory. The test rig required for Allison TES-295 approval, however, has not been established at an independent laboratory, which shifts the exorbitant cost burden of building the test rig to the company seeking approval. Outside companies, therefore, without unreasonably heavy investments in an ambiguous test program, are locked out of the market. And Allison®, by positioning itself as the only player, is able to charge exorbitant prices for their product. As a result, Allison® transmission owners who want to benefit from the potential savings realized through extended drain intervals are being taken advantage of.

In response, AMSOIL® closely examined TranSynd® and developed a replacement product named Torque-Drive™. Torque-Drive™ is a premium synthetic transmission fluid based on the same type of chemistry as TranSynd™. This is supported by the infrared (IR) scan and physical data comparisons included in this brochure. Clearly, the testing shows no measurable differences between Torque-Drive™ and TranSynd®. They do, however, differ in cost. You save money with Torque-Drive™.

The Allison® extended warranty states that Allison® will only cover repairs in which the transmission had been operated with TranSynd® or an equivalent fluid which meets the TES 295 specification. Torque-Drive™ is, in fact, based on the same type of chemistry as TranSynd® and is, therefore, recommended by AMSOIL® as a replacement for TranSynd® and for use in all TES 295 applications. And because it is not specifically designated by Allison® as a TES 295 product, the AMSOIL® warranty is in place to cover all lubricant related failures.

All Allison® transmission owners would be wise to reevaluate their use of TranSynd®, as well as their investment in the Allison® extended warranty program. There is no justification for paying the high cost for TranSynd® when an equivalent product is available for less.



The First in Synthetics®

Torque-Drive™ **Synthetic Automatic Transmission Fluid (ATD)**

Recommended for use in applications specifying Allison® TES-295 or C-4, Dexron® III, Mercon®, Voith G-1363 and ZF® TE-ML 14C

Engineered to eliminate the deficiencies common to all conventional, petroleum ATFs, AMSOIL Torque-Drive™ provides superior performance and protection against thermal and oxidative degradation, sludge and varnish formation, viscosity shear down, cold temperature oil thickening, poor friction stability, high component wear and shortened oil life. Automatic transmission operating expenses can be directly linked to transmission fluid quality. Poor quality oils need frequent changes and they reduce the effective service life of transmissions. Delivering the ultimate in oxidation resistance, wear control and friction performance, AMSOIL Torque-Drive™ extends lubricant life up to six times* and provides protection beyond that possible from conventional ATFs. Vehicles stay on the road longer, unnecessary labor and maintenance costs are reduced, and the return on costly transmission investments is maximized. Immediate financial benefits are realized upon the installation of AMSOIL Torque-Drive™.

* Depending on duty cycle, local conditions, oil analysis and/or OEM recommendations.

THERMAL AND OXIDATIVE STABILITY

Hot weather and operating conditions are no excuse for poor transmission reliability. By delivering a slower than normal oxidation rate, AMSOIL Torque-Drive™ prevents sludge that blocks small valves, prevents varnish that restricts component movement and reduces oil thickening that slows down shift times. AMSOIL Torque-Drive™ lasts longer than conventional ATFs, protects better than conventional ATFs and extends transmission life beyond that possible with conventional ATFs.

SHEAR STABLE

Conventional automatic transmission fluids use petroleum oils with viscosity index (VI) improvers added to increase the oil's operational temperature range. Over time, VI improvers shear down, promoting premature wear by leaving only a thin base oil to protect vital transmission components. AMSOIL Torque-Drive™ does not contain VI improvers, which means no VI improver shear down regardless of the operating environment. The unmatched film strength of AMSOIL Torque-Drive™ prevents wear, significantly increasing the transmission service life.



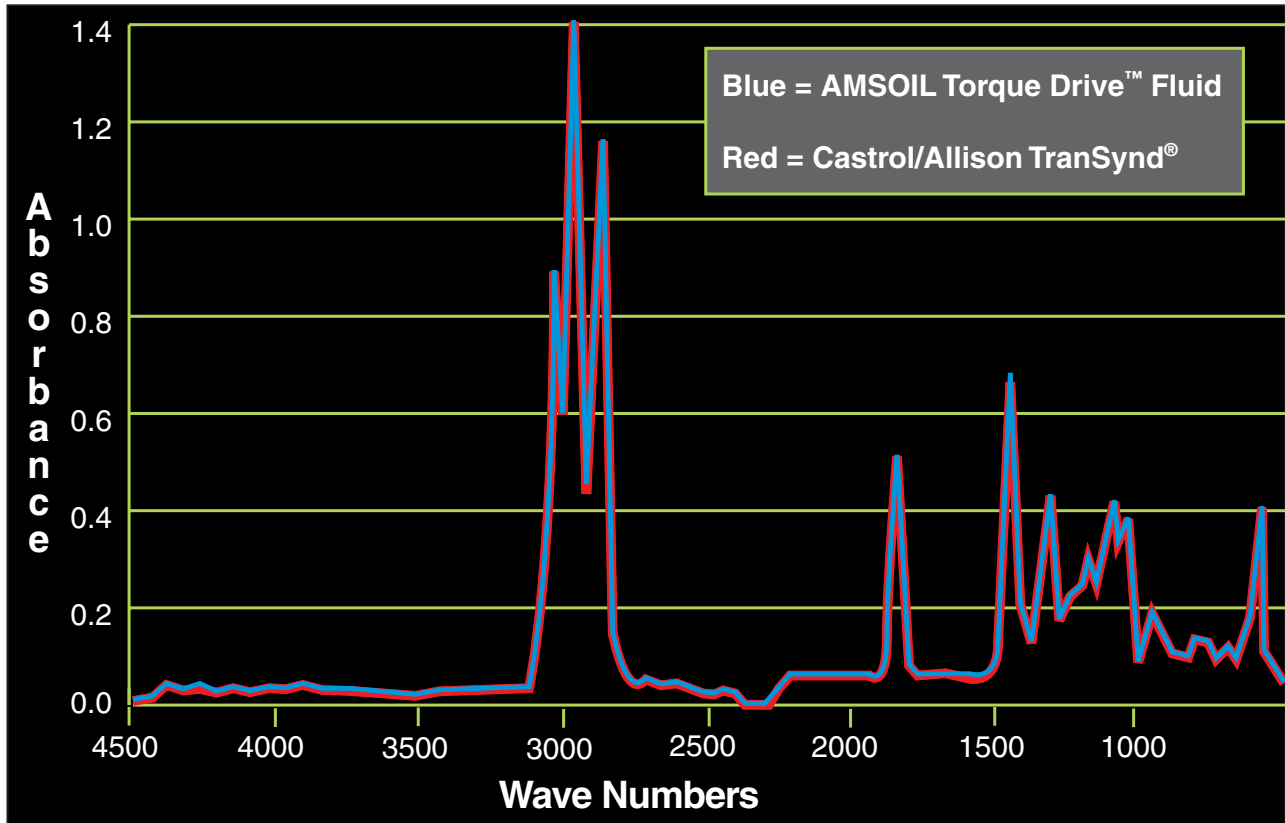
FRICION DURABILITY

Oxidation by-products destroy the sensitive friction characteristics of transmission fluids, resulting in the rapid degradation of shift quality. The thermal and oxidative stability inherent in AMSOIL Torque-Drive™ assures consistent, smooth clutch engagement with no harsh shifting throughout the life of the fluid. AMSOIL Torque-Drive™ maintains proper coefficients of friction, prevents clutch glazing and prevents elongated shift times.

EXTREME TEMPERATURE PERFORMANCE

Transmissions operate in temperature extremes. In hot temperatures, the synthetic construction of AMSOIL Torque-Drive™ virtually eliminates oil evaporation and delivers a better lubricating film than conventional oils for better overall protection of vital components. Oil consumption is reduced and transmissions require less maintenance.

In cold temperatures, AMSOIL Torque-Drive™ easily flows, as it does not contain the wax found in conventional ATFs. Cold temperature fluidity allows for the proper operation of small, delicate, electronically controlled solenoids that affect gear changes. Unlike conventional ATFs, transmissions using AMSOIL Torque-Drive™ have quick response times during cold operations and can be used immediately upon start-up.



AMSOIL Torque-Drive™ Synthetic Automatic Transmission Fluid is based on the same type of chemistry as TranSynd®. This fine Infra-red (IR) scan, revealing a chemical “picture” of both products, shows no measurable differences.

TYPICAL TECHNICAL PROPERTIES

AMSOIL Torque-Drive™ Synthetic Automatic Transmission Fluid (ATD) & Castrol/Allison TranSynd® Synthetic Automatic Transmission Fluid

	AMSOIL Torque-Drive™	TranSynd®
Kinematic Viscosity @ 100°C, cSt (ASTM D-445)	7.41	7.36
Kinematic Viscosity @ 40°C, cSt (ASTM D-445)	37.14	37.29
Brookfield Viscosity @ -40°C (cP)	8411	8400
Density @ 60°F (lb/gal)	7.038	7.047
Flash Point, °C (°F)	230 (446)	232 (450)
Pour Point, °C (°F)	-55 (-67)	-55 (-67)
Four Ball Wear Test (ASTM D-4172B: 40 kg, 75°C, 1200 rpm, 1 hr) mm	0.45	0.45
Copper Corrosion (150°C, 3 hr)	1B	1B
Spectrographical analysis		
Boron (ppm)	133	136
Calcium (ppm)	28	29
Phosphorus (ppm)	230	235

Physical comparisons between Torque-Drive™ and TranSynd® show no measurable differences between the products. Any slight variances are attributable to variances from batch to batch and from test to test, and are within experimental margin of error.

AMSOIL Limited Warranty – Lubricants

AMSOIL INC. of Superior, Wisconsin hereby warrants that its lubricants are fit for use according to the written recommendations of AMSOIL INC. and in applications specifying one or more of the standards set forth in the product data bulletins and product labels. AMSOIL INC. further warrants its products to be free of defective materials, design, and workmanship.

THIS WARRANTY IS SUBJECT TO THE FOLLOWING LIMITATIONS:

1. This warranty only applies to AMSOIL lubricants for which a separate, specific warranty is not written.
2. The warranty herein applies only to AMSOIL lubricants, which are packaged by AMSOIL INC. and sold by AMSOIL INC. or an authorized distributor.
3. The liability of AMSOIL INC. shall be limited to:
 - a. Replacement of the defective lubricant.
 - b. The cost, including labor and materials, to repair damaged equipment, or at the option of AMSOIL INC., the cost to replace damaged equipment, resulting directly from the use of AMSOIL INC. lubricants when used in the proper applications.
4. AMSOIL INC. shall not be liable for special, incidental, or consequential damages including, but not limited to, damage or loss of other property or equipment, loss of profits or revenue, cost of capital, business interruption, lodging, towing, or cost of replacement equipment. The liability of AMSOIL INC. arising out of the manufacture, sale, delivery, installation, technical directions or recommendation of any lubricant - whether in contract, tort, warranty or otherwise - shall not exceed the value of the equipment in which the product(s) were used. The remedies to the purchaser herein are exclusive.
5. In the event of a claim against AMSOIL INC., the procedure below must be completely followed.
 - a. Where the original warranty from the equipment manufacturer is still in effect, the customer shall file a warranty claim with the Original Equipment Manufacturer (OEM) in accordance with the OEM warranty procedure.
 - b. Customer shall retain failed parts for inspection by AMSOIL INC. unless given to the OEM.
 - c. Customer shall also, within 30 days of failure, notify AMSOIL INC. and provide the following:
 - (a.) An eight (8) ounce representative oil sample taken from the failed equipment and put into a clean container.
 - (b.) Documentation including make, model, and year of equipment, total accumulated miles and/or hours, and duty cycle or service environment.
 - (c.) Equipment or vehicle maintenance history documentation including miles or hours at the time of AMSOIL lubricant installation, general equipment repairs, and oil analysis results if available.
 - (d.) Proof of purchase for AMSOIL lubricant.
 - (e.) Batch number from oil container or Certificate of Analysis.
 - d. Mail the above sample and information to:
AMSOIL INC., Attn: Technical Services
AMSOIL Bldg.
Superior, WI 54880
 - e. In cases where the OEM warranty is still in effect and that warranty coverage is denied based on the use of an AMSOIL lubricant, the customer shall immediately notify AMSOIL INC. and provide a written copy of the OEM warranty denial.
 - f. AMSOIL INC. may, at its option, notify its insurance carrier of the claim.
 - g. AMSOIL INC. or its insurance carrier may conduct an investigation that includes, but is not limited to, an inspection of the failed parts, a review of the operating conditions, and a thorough review of the information requested above. The customer agrees to cooperate with such investigation.
 - h. If AMSOIL INC. or its insurance carrier pays a claim, an attempt may be made to recover amounts paid from the OEM. If this occurs, the customer may be asked to provide further information pertaining to the failure and to cooperate with AMSOIL INC. or its insurer in the recovery process.

THE WARRANTY MAY NOT BE EXTENDED TO COVER:

1. AMSOIL lubricants used in mechanically deficient equipment as a result of abnormal operation; negligence; abuse; damage from casualty, shipment or accident; or equipment modification done without written authorization from the OEM.
2. AMSOIL lubricants that have been used for the purposes of racing or in applications where the OEM required lubricant standards do not match those stated by AMSOIL INC. without the written approval from AMSOIL INC.
3. AMSOIL lubricants that have been contaminated after leaving the AMSOIL INC. premises due to improper handling, storage or through equipment deficiencies in which an AMSOIL lubricant has been installed.
4. AMSOIL lubricants which have been packaged, regardless of container, by anyone other than AMSOIL INC. or an AMSOIL authorized packager.
5. Any allegedly defective AMSOIL lubricant for which a reasonable sample has not been preserved.
6. Failure of equipment when AMSOIL lubricants are not used in strict accordance with either the written recommendations of AMSOIL INC. or the OEM for warranty coverage.
7. AMSOIL lubricants that have been used in conjunction with any other product or additive that has not been authorized for use by AMSOIL INC.
8. Failure of equipment due to a pre-existing condition that is unrelated to the use of AMSOIL.
9. Repair or replacement of equipment because of normal wear.

AMSOIL RESERVES THE RIGHT TO REJECT A WARRANTY CLAIM FOR ANY OR ALL OF THE FOLLOWING REASONS:

1. Failure to follow all OEM recommendations for warranty coverage, including lubricants, maintenance, and drain intervals, prior to the first installation of AMSOIL lubricants.
2. AMSOIL INC. was not notified within 30 days from the date of failure.
3. Claim information is insufficient.
4. Parts inspected do not substantiate a claim or indicate failure.
5. Parts requested were not sent or are unavailable for inspection.
6. Oil sample was not provided.
7. Failure of the customer to follow the written procedure herein.
8. Customer refused to cooperate with the investigation.
9. Failure was the result of an OEM defect.

This warranty shall be governed, interpreted and construed by, and in accordance with, the laws of the State of Wisconsin.

AMSOIL INC. IS THE SOLE AUTHOR OF THIS POLICY AND MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED UNLESS A SEPARATE, SPECIFIC WARRANTY HAS BEEN WRITTEN.

SOME STATES DO NOT ALLOW EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

Contacts:

AMSOIL INC.
AMSOIL Bldg.
Superior, Wisconsin 54880
715-392-7101 Fax: 715-392-3097

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AMSOIL Warranty

Torque-Drive™ Product Applications

AMSOIL Torque-Drive™ is recommended as a direct replacement for TranSynd® Synthetic ATF in heavy duty, on and off highway automatic transmissions manufactured by Allison®, General Motors®, Ford®, Voith® and ZF® or wherever the standards TES-295, C-4, Dexron® III, Mercon®, Voith G-1363 or TE-ML 14C are specified. Examples of operations that benefit from using AMSOIL Torque-Drive™ include municipal or transit buses, motor coaches, garbage haulers, motor homes, delivery vans, emergency vehicles, school buses, dump trucks, utility vehicles, cement trucks, line haul trucks and tow trucks.

Where extended drain intervals are not specified by the original equipment manufacturer (OEM), it is recommended that AMSOIL Torque-Drive™ be evaluated with oil analysis at standard OEM drain intervals or more frequently to establish proper drain interval. Where extended drain intervals are recommended by the OEM, follow that recommendation. This includes the recommendations set by Allison® in document #1099E for TES-295 fluids.



AMSOIL products and Dealership information are available from your local AMSOIL Dealer.

